A GRID AND GROUP EXPLANATION OF STUDENTS' AND INSTRUCTORS' PREFERENCES IN COMPUTER ASSISTED INSTRUCTION: A CASE STUDY OF UNIVERSITY CLASSROOMS IN THAILAND

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CHAPTER I

INTRODUCTION

Computer assisted instruction (CAI) and E-Learning have become increasingly popular in all areas of education. Broadly speaking, CAI refers to the use of computers in the educational process (ComputerUser, 2008; O'Neal, Kauffman & Smith, 1981-1982; Roberts, 1984; The Resources for Electronics Training, 2008). E-Learning and web-based learning are closely tied with CAI and involve the delivery of content via all electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM (Downey, Wentling, Wentling, & Wadsworth, 2005; Mathew & Doherty-Poirier, 2008; McCarty, 2008; Rosenberg, 2001; Stone & Koskinen, 2002). Many organizations are moving the delivery of training from traditional instructor-led classroom training toward technology-based training because of its cost-effectiveness and flexibility (Ravet & Layte, 1998; Thompson, Koon, Woodwell & Beauvais, 2002).

CAI is the use of a computer in the actual instructional process. Implementation of CAI uses any (or all) of the following six modes of CAI: (1) Tutorial, (2) Drill and Practice, (3) Instructional Game, (4) Modeling, (5) Simulation, and (6) Problem Solving (Wegener, 2008; Wenglinsky, 2005).

CAI is used because of its benefits: (1) Self-paced instruction, which allows students to practice procedures to achieve defined competencies; (2) Immediate feedback provided by CAI saves time and prevents learning the "wrong" concepts; (3) Assessment. With CAI, students can determine their own weaknesses and concentrate efforts on overcoming those weaknesses before moving on to more advanced concepts; (4) Good CAI materials reward students instantly for correct responses and behaviors. This encourages students to move confidently to more complex concepts. CAI can make learning interesting and exciting; (5) CAI leaves the instructor more time to work with students on an individual basis; and (6) Simulated experiences (Kulik, 1994; Resources for Electronics Training, 2008; Venezky & Osin, 1991).

Statement of the Problem

The use of Computer-Assisted Instruction (CAI) or Computer-Based Training (CBT) is increasing and creating a unique learning culture in higher educational environments. CAI is one of the most widely used techniques in instruction and not limited to courses taught in schools and colleges. It has an enormous range of potential applications, from formal academic courses to on-line manuals and computer-user guides (Adkins, 2002; Bassi & Buren, 1999; Bowles, 2004; Venezky & Osin, 1991).

Although CAI is becoming increasingly popular, there are questions about its appropriateness and effectiveness in the teaching and learning process (Azevedo & Bernard, 1995; Henke, 2001; Liao & Bright, 1991). Many researchers have reported the positive effects of CAI (Apperson, Laws & Scepansky, 2006; Ash, 2005; Baker, Gearhart & Herman, 1994; Clark, 1983; Kulik & Kulik, 1991; Kuttan and Peters, 2003; Liao, 2007; Schmidt, Weinstein, Niemiec, and Walberg, 1985; Walberg, 1985; Wang, Hinn &

Kanfer, 2001; Wenglinsky, 1998; Willett, Yamashita, and Anderson, 1983). However, many researchers have also addressed problems associated with CAI (Liegle & Janicki, 2001; National Research Council, 2002; Ross & Schulz, 1999; Schenk & Silvia, 1984; Siegfried & Fels, 1979). Stansberry (2001) stated:

> This question highlights an important dilemma in higher education today: decades ago universities spent very little to equip classrooms with chalkboards, and the majority of faculty members used them a great deal. Today, universities are spending a great deal of their budgets on IT tools, yet the majority of faculty members are still firmly entrenched in the more traditional and less sophisticated technology tools in instructional delivery, using only the chalkboard or a similar substitute rather than new technologies to enhance teaching and learning (p.7).

The reasons for unsuccessful CAI are not only in human limitations, but also in the media. Sun and Cheng (2007) concluded that the use of rich media in E-Learning should fit the characteristics of the course unit under consideration. Moreover, many studies showed that too much unnecessary multimedia elements in CAI may distract learners and actually decrease learning performance (Bartscha & Cobern, 2003; Mayer, Heiser, & Lonn, 2001; Rieber, 1996).

The results of many studies demonstrated consistently that technology has little influence on learning without appropriate instructional strategies (Clark, 1994, 2001, 2005; O'Neil, Chen, Wainess & Shen, 2008). Saettler (1990) listed several reasons of unsuccessful CAI, such as lack of support from certain sectors, technical problems in implementation, lack of quality software, and most of all, cost.

One way to explain the varying results in CAI success is through Cultural Theory or Douglas's (1982) grid and group typology. Mary Douglas (1982) stated that peoples' cultural preferences affect how they learn as well as what they are interested in learning. Cultural Theory has become popular because of its utility in explaining a variety of educational issues (Harris, 2005). Stansberry (2001) successfully used this theory to study technology use in US-based institutions, and Harris (2005) employed this theory to explain educational practice and learning preferences in a variety of settings. In this study, Douglas's typology of grid and group will be used to explain the learning preferences of students in a Thai university.

Purpose of the Study

This study was conducted at Prince of Songkla University (PSU) in the southern part of Thailand in the first semester of 2008. The study had three overlapping purposes. The first purpose was to use Douglas's typology to explain the educational culture of the Faculty of Management Sciences (FMS) at PSU. The second was to describe the students' and instructor's preferences about CAI in FMS. The last purpose was to describe CAI practices in FMS.

Research Questions

This study addressed the following research questions:

1. How does Douglas's typology explain the educational culture of the FMS at PSU?
2. What are the students and instructors attitudes toward CAI?
3. What is the interrelationship of CAI practice and educational preferences among the students and the faculty?

4. How useful is Douglas's typology of grid and group in understanding this interrelationship?
5. What other realities are revealed in this study?

Theoretical Framework

The theoretical base for this study was drawn from multi-disciplinary exploration and developed by integrating research from Cultural Theory and information technology. A primary assumption of Cultural Theory is that life involves people (Chitapong, 2005). Additionally, "Cultural Theory classifies different types of cultures based upon their levels of individual autonomy" (Douglas, 1992, p. 187). Learning is an active, constructive, cumulative, and goal-oriented process (Shuell, 1990). Technology plays a vital role in everyday life, including learning, because "technology had changed the way we work, communicate, and learn" (Yeh, 2005, p. 1).

Teachers use technology to help students learn best. However, technology as the only means does not guarantee that students will learn as teachers hope. There are many factors contributing to successful teaching using technology in teaching. Bowles (2004), who presented various valuable findings about E-Learning stated in his book, that "the effective and efficient implementation of E-Learning relies on complex interactions between the needs and expectations of learners, facilitators and organizations, all of which must be understood in order to maximize systems-wide competitive outcomes" (p. 49). Cultural Theory of risk, often referred to simply as Cultural Theory, aims to understand why different people and social groups fear different risk. The main features of the theory can be summarized in a few claims:

- Culture matters. Preferences and justifications shape the world of social relations. Everything human beings do or want is culturally biased.
- It is possible to distinguish a limited number of cultural types. That can be done by constructing a typology of cultures. This typology includes viable combinations of patterns of social relations and patterns of cultural biases (or cosmologies). These combinations are often called subcultures, ways of life or rationalities, ways of organizing, social orders, solidarities, political cultures, or simply types.
- The typology of viable combinations is universal. It can be applied anywhere anytime because the two dimensions of sociality grasp the fundamental nature of the social being (Mamadouh, 1999, pp. 396-397).

In short, Cultural Theory states that peoples' cultural preferences affect how they learn as well as what they are interested in learning (Douglas, 1982). The typology of grid and group was developed by a social anthropologist Mary Douglas (1982). Harris (2005) explained that Douglas's typology of grid and group provides a matrix to classify educational contexts and draw specific observations about individuals' values, beliefs, and behaviors. According to the typology, there are "four, and only four, distinctive school contexts in which one may find him or herself, and only two dimensions, grid and group, which define each of those four prototypes" (Harris, 2005, p. 34).

Grid is the dimension of individualization of members in the organization, and group is the dimension of social incorporation of members in the organization (Douglas, 1982). The grid dimension refers to the degree of limitation of choices. Harris (2005) pointed out that "In Douglas's frame, grid refers to the degree to which an individual's

choices are constrained within a social system by imposed prescriptions such as role expectations, rules, and procedures" (p. 34). He further concluded:

> In summary, grid refers to the degree to which individuals are constrained by role differentiation, rules, and expectations. On the grid continuum, high-grid educational contexts are those in which role and rule dominate individual life choices, and low-grid environments are characterized by individual autonomy and freedom in role choices. (Harris, 2005, p. 36)

Lingenfelter (1996) stated that group refers to "the degree to which people value collective relationships with one another and define those relationships in terms of insider/outsider distinctions" (p. 24). Harris (2005) added that group represents the "extent to which they are committed to the larger social unit" (p. 36). Group can be measured by the requirements on the individual to adapt and to comply with group expectations (Spickard, 1989).

> In strong-group social environments, specific membership criteria exist, and explicit pressures influence group relationships. The survival of the group is more important than the survival of individual members within it…Strong-group environments are typically replete with prominent signs that display member allegiance…Strong-group environments value the continued existence of the school, and weak-group contexts value individual interest over the priority of collective arrangements (Harris, 2005, pp. 36-38).

In simultaneous consideration of high or low strengths in both grid and group dimensions, Douglas's four distinct possibilities of social contexts emerge (Chitapong, 2005). The typology is a combination of a grid dimension and a group dimension. Figure

1 categorizes the four social contexts with their respective grid and group environments, and each social context has its distinctive characteristics:

1. Bureaucratic environments (strong-grid and weak-group)
2. Individualist environments (weak-grid and weak-group)
3. Corporate environments (strong-grid and strong-group)
4. Collectivist environments (weak-grid and strong-group)

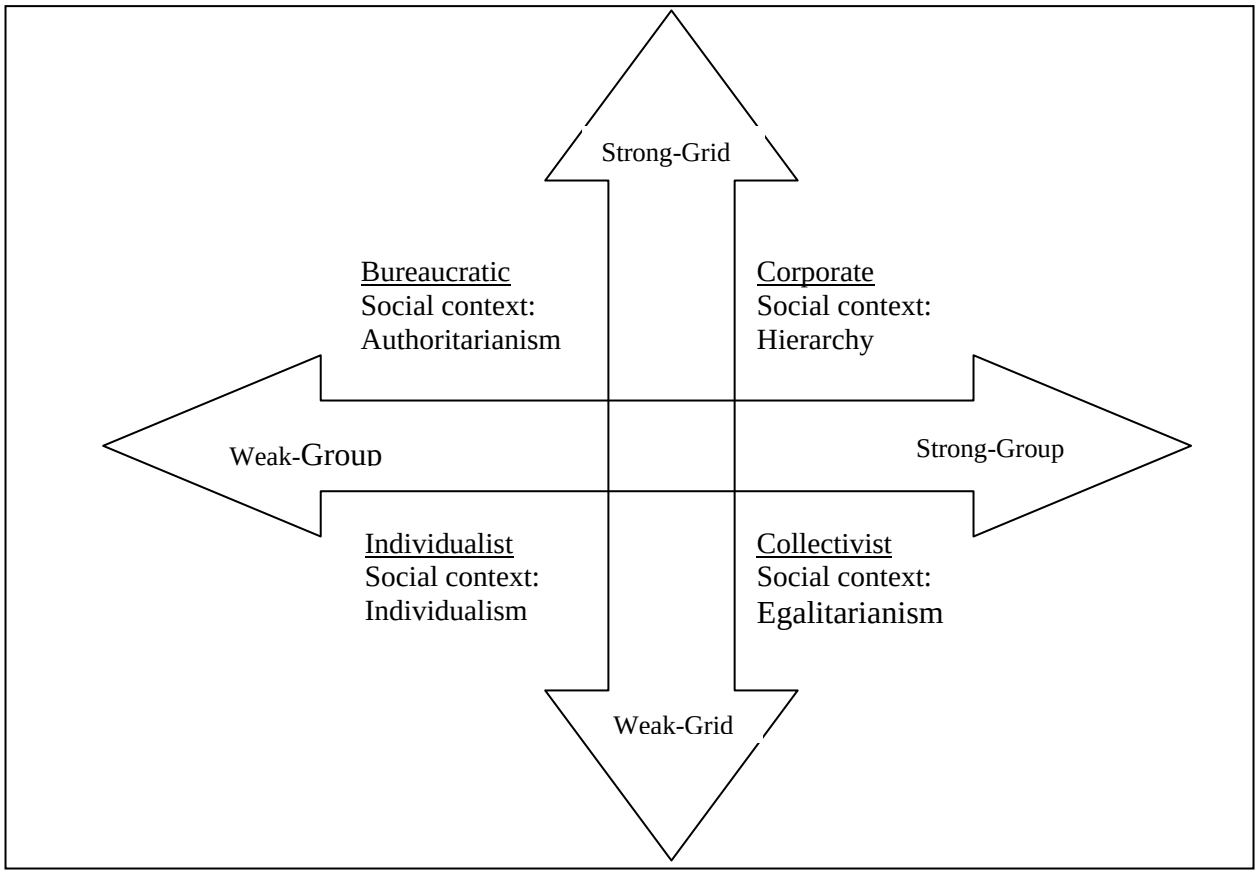

Figure 1. Types of social environments and their social contexts. From "Understanding the Culture of Schools," by E. L. Harris, 2005, Key Strategies to Improve Schools, Lanham, Maryland: Rowman & Littlefield Education, p.41. Used with permission of the author.

Ellis (2006) summarized that “these four systems are important to educators in understanding the structure of their classroom and the roles and relationships of the students (the culture)” (p. 36). This understanding can be helpful in resolving conflicts and creating a conductive classroom learning environment. Douglas (1982) identified the quadrant that best describes social context. Chitapong (2005) also noted that “in analyzing an individual’s preferences, grid and group typology does not assume the preferences, or choice, are predetermined. The method takes into consideration the cumulative effect of individual choices on the social situation itself” (p. 14). Douglas explained that “both can interact, the individual and the environment, and either can move because the environment is defined to consist of all the other interacting individuals and their choices” (p. 198). A more concise and complete conclusion about four social contexts in four quadrants is listed below:

Bureaucratic environments

1. In the extreme, the individual has no scope for personal transactions.
2. There is little individual autonomy.
3. Roles and rules are defined without ambiguity.
4. Group goals and survival are not important.
5. The environment is hierarchical with predominately set criteria.

Individualist environments

1. The social experience of the individual is not constrained by group rules or traditions.
2. Role status and rewards are competitive and based on merit.
3. There is little distinction between individual role statuses.

4. Long-term group survival is not emphasized.

Corporate environments

1. The group maintains boundaries against outsiders that limits social relationships and experiences of its members.
2. The individual's identification is derived from group membership.
3. Individual behavior is subject to controls exercised in the name of the group.
4. A hierarchy pyramid of role levels exists with greater individual power at the top of the pyramid.
5. Group survival and perpetuation of tradition are of utmost importance.

Collectivist environments

1. The individual's identification is granted through group membership.
2. Individual behavior is subject to controls exercised in the name of the group.
3. Authoritarian leadership and hierarchy are rejected.
4. The perpetuation of group goals and group survival is of utmost importance.

Procedures/Methods

This study was triangulated by multiple methods and data sources "to overcome the intrinsic bias that comes from single-methods, single-observer, and single-theory studies" (Denzin, 1989, p. 307). Moreover, Patton (2002) stated, "Qualitative findings may be presented alone or in combination with quantitative data. Research and evaluation studies employing multiple methods, including combinations of qualitative and quantitative data are common" (p. 5).

In this study, a questionnaire, interviews, observation, and archives collection allowed the researcher to develop a “picture” of participants’ experiences and perceptions. These experiences and perceptions were then analyzed to form a description of a specific situational phenomenon, or a case study (Stansberry, 2001).

Case studies are one of the most popular methods of conducting social science research (Burton, 2000). Runyon (1982) stated that case study is the presentation and interpretation of detailed information about a single subject, and event, culture or individual. Yin (1994) presented five reasons for the case study to be a particularly good means of educational research. Those five reasons can be called “DEEPS” for easy remembrance. The case study research has the ability to describe, explore, exemplify, provide a meta-evaluation, and surmise: (1) describe the real-life context in which an intervention occurs; (2) explore situations in which an intervention exists but has no clear, set outcomes; (3) exemplify specific topics in a descriptive mode; (4) provide a meta-evaluation—a study of an evaluation study; and (5) surmise causality among complex, real-life interventions.

Protection of Human Subjects

Besides ordinary programs which used Thai in teaching, FMS provided a special program for the bachelor degree. It was bachelor of business administration program in management (English). It used English in teaching, referred to as BBA. The researcher invited students to answer the online questionnaire for students. The researcher sent e-mail to e-mail loop of FMS instructors to ask for cooperation in answering online questionnaire for instructor. From the questionnaire, any student or instructor who agreed to be interviewed informed the researcher of his/her personal e-mail address or telephone

number so the researcher could contact him/her for the interview step. The researcher conducted individual interviews according to their available times.

Instrumentation

The primary instrument used in the study was the researcher. In this study, the researcher used the "Grid and Group Cultural Preference Tool" for students and the "Grid and Group Cultural Preference Tool" for instructors. They were online questionnaires adapted from the survey instrument constructed by Harris (2005). The English version of the instrument for students and instructors can be seen in Appendix C and Appendix E respectively. It has been used several times in schools located in the United States (Harris, 2005) and also in Thai settings (Chitapong, 2005). The researcher received permission from Harris (2005) to use this instrument in the study conducted at FMS in Thailand. The researcher translated the survey from English to Thai, and then Mrs. Sinlapamethakul translated it back to English to assure that the translation corresponds to the original version. The Thai version instrument for students and instructors can be seen in Appendix D and Appendix F respectively.

Data sources

A total of 133 students answered the online questionnaire for students and 39 instructors answered the online questionnaire for instructors. After that, purposive sampling technique was utilized to select 14 students and 9 instructors from the initial group of participants. Purposive sampling requires a procedure that is "governed by emerging insights about what is relevant to the study based on the focus determined by the problem and purposively seeks both the typical and divergent data to maximize the

range of information obtained about the context" (Erlandson, Harris, Skipper & Allen, 1993, p. 148). An in-depth interview method was used at this stage.

Observations of the general environment were another data source. They included two classroom observations. The documents or artifacts related to CAI such as teaching materials, brochures, news of the FMS, field notes also served as valuable data sources.

Data Collection

Creswell (1994) explained that the data collection procedures in a qualitative design are composed of " (a) setting the boundaries for the study, (b) collecting information through observations, interviews, documents, and visual materials, and (c) establishing the protocol for recording information" (p. 148). The target populations were undergraduate students and faculties in the faculty of Management Sciences (FMS), Prince of Songkla University (PSU). They were asked to be volunteers in this study. The exploratory research was conducted in the third week of the first semester of the year 2008 (from June 16, 2008 to July 11, 2008).

The researcher asked for permission from the Dean of FMS to do the study. Students who volunteer to be a participant went to the website http://frontpage.okstate.edu/coe/aree1 to answer the "Grid and Group Cultural Preference Tool" questionnaire which was already uploaded to the website. The address for the instructors' questionnaire was available on another website (http://frontpage.okstate.edu/coe/aree2). Even though the main part of both questionnaires was the same, the "Grid and Group Cultural Preference Tool", the needed demography for students and instructors were different. Therefore, the researcher put the questionnaires in different websites.

The researcher used “Grid and Group Cultural Preference Tool” as an instrument to classify participants in the quadrants. The survey results allowed the researcher to purposively select participants from each quadrant for a qualitative interview.

The selected participants for interview were 14 students and 9 instructors of FMS. A Thai consent form giving permission to be interviewed was given to each participant. All participants were encouraged to give honest information to the interview questions. Babbie (2008) stated that “a qualitative interview is essentially a conversation in which the interviewer establishes a general direction for the conversation and pursues specific topics raised by the respondent.” (p. 336). The interview process provided the interviewees with the opportunity to discuss their experiences, attitudes and preferences about CAI, pattern they like most as instructors and students, and other general information about CAI. The interview questions can be seen in Appendix I.

The Survey Instrument

The questionnaire survey study occurred in the third through the sixth week of the first semester of the year 2008 (from June 16, 2008 through July 11, 2008). This time period was chosen because it was an appropriate time for the students. They could settle all their subjects at least in the third week, and the last day of the second week was the last day that students can add up or withdraw subject with money refund. The eighth week would be midterm exam and final exam was on the sixteenth week.

Interviews

After the survey data of phase 1 were gathered and plotted on the grid/group quadrant, twelve students (two from each quadrant of social context) were contacted to set up a qualitative interview schedule. All of them were willing to provide the needed

valuable information. The interview took place on site; all the interviewees had completed the survey. Each participant was previously given a Thai consent form. All interviewed participants were encouraged to give honest information to the interview questions. The interview process provided the researcher the opportunity to discuss the learning preferences of students and the teaching preferences of instructors. Interview questions can be seen in Appendix I.

Document analysis

At the beginning of the study, the most public and easily accessed documents were gathered. The Faculty of Management Sciences website (http://www.mgt.psu.ac.th) was accessed and analyzed. Brochures in the office of the faculty secretary, the Department of Business Administration, and the Department of Public Administration were collected and analyzed. During each of the interviews, participants were asked if they would provide documents such as course descriptions, press releases, and descriptions of information technology tools, that would contribute to the study.

Observations

Two crucial strategies used in this study were observations of students' interactions, instructors' interactions and collection of field notes. Weimer (1979) noted that observation is "a skill over and above passive reception of the raw data of sensory experience" (p. 21). Patton (2002) stated that the purpose of observation analysis is to take the reader into the setting that was observed, which means that "the reader can understand what occurred and how it occurred" (p. 23). Another important research tool used in participation observation was "a notebook into which you enter your

observations" (Dane, 1990, p. 161), the field journal. Field notes in the field journal were taken during observations and used for analysis along with interviews and documents.

A summary of methods used is in the table below.

Table 1
Methods used for data collection

Method	Overall purpose	Advantages	Challenges
Online survey	To obtain measurable data within time constraints.	Easily obtained large amounts of data. Very inexpensive Less time consuming and easy to analyze	Systematic (non-sampling error), which is error resulting from some imperfect aspect of the research design that causes response error or from a mistake in the execution of the research; error that comes from such sources as sample bias, mistakes in recording responses, and non-responses from persons not contacted or refusing to participate.
Interview	To gather qualitative information that cannot be directly observed.	Allowed researchers to gather additional information that could not be captured in the survey. Allows interaction amongst the participants.	Interviewer error, which is administrative error caused by failure of an interviewer to perform tasks correctly.
Document analysis	To constitute part of the repertoire of field research	Documents prove valuable not only because of what can be learned directly from them but also as stimulus for paths of inquiry that can be pursued only through direct observation and interviewing.	Learning to use, study, and understand documents and files is part of the repertoire of skills needed for qualitative inquiry.
Observation	To take the reader into the setting that was observed	Direct data collection. It directly records what people do, as distinct from what they say they do.	Behavior, not intentions. Its focus on overt behavior describes what happens, but not why it happens. It does not deal with the intentions that motivated the behavior.

(Table adapted from Denscombe, 2007, Kelsey, 2005, Patton, 2002, and Zikmund, 2000)

Significance of the Study

Information obtained from this study will provide better understanding about

interrelationship of students and instructors' preferences in CAI. The knowledge gained will have significance for the following:

Practice

This study may benefit teachers and students involved in CAI in Thailand, because it will give insight into how the classroom environment affects the education practices of students by:

1. Reporting and examining the learning preferences of students about CAI
2. Identifying appropriate patterns of CAI to be developed
3. Determining the extent to which student perceive CAI in their specific cultural context using Douglas's grid and group typology (1982) model.

Research

By asking about students' and instructors' preferences in CAI, this study used a case study method, to examine students preferences in CAI. This study contributes to the current body of literature, because it provides another example of how grid and group typology classifies students' preferences in CAI.

Theory

The study tested the usefulness of Douglas's framework in classroom settings in a Thai institution. The explanation of Douglas's framework as well as the way it was utilized in this study can provide a model for other studies using this theory.

Limitations of the Study

The participants of the study were students and faculties from the faculty of Management Sciences, Prince of Songkla University, Hatyai campus in the first semester of 2008. The students' population may not have been representative of the general

students of Thailand or Prince of Songkla University due to purposive sampling strategies. Therefore, while generalizations cannot be inferred, transferability of findings may occur depending on the likeness of receiving contexts.

Definitions of Terms

1. Cultural pluralism: A state of equal co-existence and mutually supportive relationship within the framework of one set (i.e., nation, school system, city, etc.) of people of diverse cultures with significantly different patterns of belief, behavior, color, and in many cases, with different languages (Hazard & Stent, 1973).

Definitions for the following terms are taken from Lincoln and Guba (1985).

2. Naturalistic inquiry: A paradigm for inquiry based upon the assumption that multiple realities exist, that inquiry will diverge rather than converge as more and more is known, and that all parts of reality are integrated.

3. Natural setting: The setting in which the phenomena being observed occurs without artificial inducement or adjustment.

4. Trustworthiness: The establishment that the data and interpretations produced by the study are dependable and reliable. In a naturalistic inquiry, trustworthiness is reflected by the presence of four major components: credibility (truth value); transferability (applicability); dependability (consistency); and confirmability (neutrality).

5. Credibility: The assurance that the findings and interpretations produced by the study will be considered worthy of belief by the human sources from which they have come.

6. Transferability: A quality which depends on the degree of similarity between sending and receiving contexts. The phenomena studied are intimately tied to the time

and context in which they are found; thus, applicability to other times and contexts may not be possible. However, some transferability may occur when essential similarities exist between sending and receiving contexts.

7. Dependability: The assurance of consistency through the seeking of a means for taking into account both factors of instability and factors of phenomenal or design induced change. Dependability is not based on invariance but "trackable variance" which can be ascribed to sources such as error, reality shifts, and increased instrumental proficiency.

8. Confirmability: The establishments that the data produced through the research are reliable and factual as determined through examination by an inquiry auditor.

9. Thick Description: The communication of sufficient information about the context in which an inquiry is carried out so that anyone else interested in transferability has a base of information appropriate to the judgment.

10. Triangulation: A variety of data sources, different perspectives or theories, and different methods pitted against one another in order to cross-check data and interpretation.

Summary and Organization of the Study

This dissertation is organized in six chapters. Chapter I offers an overview of the study. Chapter II reviews the literature. Chapter III provides an explanation of the qualitative research methodology. Chapter IV presents the data collected from the selected setting, the Faculty of Management Sciences, Prince of Songkla University, in the southern part of Thailand. Chapter V provides an analysis and interpretation of the

data. Chapter VI presents recommendations for future research, and includes a summary, implications, conclusions, and discussion.

CHAPTER II

LITERATURE REVIEW

The purpose of this qualitative study was to explain the learning preferences of students and computer aided instruction (CAI) using Douglas's typology of grid and group. Therefore, the review of literature addresses the conceptual areas of CAI and instruction, successful and unsuccessful usage of CAI, and Douglas' (1982) grid and group typology as the conceptual/theoretical framework for this study.

CAI and Instruction

Definitions of computer assisted instruction

The ComputerUser (2008) definition of computer aided instruction (CAI) is "using computers as aids for instructional purposes". The Access Center (2008) explains:

> Computer-assisted instruction (CAI) refers to instruction or remediation presented on a computer. Many educational computer programs are available online and from computer stores and textbook companies. They enhance teacher instruction in several ways. (p. 3)

The Resources for Electronics Training (2008) emphasizes the same meaning of CAI, referring to any use of computers that interacts with students in any way in the educational process.

CAI was initially conceived as a direct descendent of programmed instruction "and many early uses of computers for teaching purposes constituted adaptations of the teaching machine" (Knapper, 1980, p. 27). In the beginning, most definitions of CAI referred to pertinent hardware at that time. For example, O'Neal, Kauffman, and Smith (1981-1982) characterized CAI as "a process in which the learner interacts directly with lessons displayed on a cathode-ray tube (CRT) or…printed by a terminal that provides hard copy" (p. 160).

In the mid-1950s and early 1960s a group effort of educators at Stanford University in California and International Business Machines Corporation (IBM) introduced CAI into selected elementary schools (Arnold, 2007). CAI was first developed on a large mainframe computer and began to flourish (Johnston, 1987). The early CAI systems were limited by the cost and difficulty of obtaining, maintaining, and using the computers that were available at that time (Arnold, 2007):

> Programmed Logic for Automatic Teaching Operations (PLATO) system, another early CAI system initiated at the University of Illinois in the early 1960s and developed by Control Data Corporation, was used for higher learning. It consisted of a mainframe computer that supported up to 1000 terminals for use by individual students. By 1985 over 100 PLATO systems were operating in the United States. From 1978 to 1985 users logged 40 million hours on PLATO systems. PLATO also introduced a communication system between students that was a forerunner of modern electronic mail (messages electronically passed from computer to computer). The Time-shared Interactive Computer-Controlled Information Television (TICCIT) system was a CAI project developed by Mitre Corporation

> and Brigham Young University in Utah. Based on personal computer and television technology, TICCIT was used in the early 1970s to teach freshman-level mathematics and English courses (p. 4).

Besides TICCIT which was a CAI system developed at the MITRE Corporation, the University of Texas and Brigham Young University, there was TOAM, a multi-terminal CAI system developed at the Centre for Educational Technology in Tel Aviv. Moreover, there was TUTOR, a CAI authoring language developed in 1967 at the University of Illinois for PLATO III (Venezky & Osin, 1991).

With the arrival of cheaper and more powerful personal computers in the 1980s, CAI use increased dramatically. “In 1980 only 5 percent of elementary schools and 20 percent of secondary schools in the United States had computers for assisting instruction. Three years later, both numbers had roughly quadrupled, and by the end of the decade nearly all schools in the United States, and in most industrialized countries, were equipped with teaching computers” (Arnold, 2007, p. 4) . In 1987, there were more than 8,000 instructional software programs listed in TESS: The Educational Software Selector published by the Educational Products Information Exchange (EPIE) Institute (Johnston, 1987). Most of them were still the drill-and practice variety, but with “considerable variation and ingenuity” (Rosenberg, 1997, p. 176). Other kinds of CAI instructional mode were created later. “True tutorial software – a more complex instructional and programming task, requiring fairy sophisticated computer systems – is only beginning to appear in the mid 1980s” (Johnston, 1987, p. 64).

Varieties of computer assisted instruction

There were many instructional modes of CAI. The "Apple Computers of Tomorrow (ACOT) was one of the most comprehensive attempts to move educational computing from drill- and practice activities to more complex skills, known as higher order or critical-thinking skills" (Wenglinsky, 2005, p. 34). ACOT was initiated in classrooms on five school sites in 1985 (Apple Education, 2008; Baker, Gearhart & Herman, 1994) and introduced a very different kind of intervention into the classroom as Wenglinsky (2005) stated:

> CAI was, for the most part, a set of drill-and-practice activities that students undertook individually, without much interaction with teachers or other students. When students were not on computers, the balance of time was typically spent on "direct instruction," meaning lectures and some discussion between the teacher and the class as a whole. ACOT sought to change the role of computers in the classroom and, in so doing, also change the interactions between students and teachers and among students. Rather than involving drill and practice, ACOT focused on student-initiated work, long-term projects, access to multiple learning resources, and small group work (p. 37).

Truett and Gillespie (1984) noted that "Lesson formats in CAI can be tutorial, in which basic information is imparted; standard drill-and-practice; problem solving; simulation; games; or a combination of two or more of this format" (p. 11).

There are many terms with similar meaning. Wegner (2008) explained clearly that CAI is a component in a computer based training (CBT). CBT is used if the writer wants to emphasize training. Computer based education (CBE) is used to emphasize education

while computer based learning (CBL) is used to highlight learning, and computer based instruction (CBI) is used to stress instruction. The term Technology Based Training (TBL) is used to deflect attention away from the computer, to emphasize training, and to recognize that in reality any form of CBT uses several different technologies. All these terms have the same meaning with CBT which contains three components: (1) Computer Assisted Instruction (CAI), (2) Computer Managed Instruction (CMI), and (3) Computer Supported Learning Resources (CSLR).

CAI is the use of a computer in the actual instructional process. Implementation of CAI includes any (or all) of the following six modes of CAI: (1) Tutorial, (2) Drill and Practice, (3) Instructional Game, (4) Modeling, (5) Simulation, and (6) Problem Solving (Wegner, 2008).

Rosenberg (1997) explained the basic mode of drill and practice:

> The computer asks a question, receives the answer, and provides an appropriate response. If the student's answer is correct, positive feedback is provided, usually in the form of an affirming comment to the student. If the answer is incorrect but belongs in a class of expected answers, a variety of responses may be selected. Finally, if the answer is incorrect and the system cannot deal with it, it must repeat the original question and supply the answer, or go on to a new but similar question. In the second case, the question may be repeated with an encouraging remark, or new question is posed based on the student's perceived difficulty. (pp.175-176)

Alessi and Trollip (1991) suggested that simulations should be used instead of actual experience when the latter is "unsafe, costly, very complex, or logistically

difficult" (p. 161). Moreover, simulations should be used instead of other modes of CAI when there is a need to increase motivation, transfer of learning, or efficiency.

CMI is the use of a computer to manage instruction and involves each of the following three modes of CMI: (1) Testing, (2) Prescription Generation, and (3) Record keeping (Wegner, 2008). Truett and Gillespie (1984) explained that "CMI can be used to diagnose, prescribe, present, evaluate, inform, and keep track of student progress just as the individual teacher would", and "CAI has generally come to loosely include these CMI applications as well" (p. 12).

CSLR is the use of a computer to provide access to information by a learner in the learning process. The four modes of CSLR are: (1) Data bases, (2) Telecommunications, (3) Expert Systems, and (4) Hypermedia (Wegner, 2008).

With varieties of CAI, Rosenberg (1997) summarized that "drill and practice are helpful when simple facts are to be learned in a structured context" (p. 176). Rosenberg (1997) emphasized that "the major contribution of the computer to education is to facilitate traditional skills practice and rote drill in a flashier style than that provided by traditional textbooks" (p. 177).

A complete CAI system

There must be many functional components to compose together to create a complete CAI system, which is reflected in the following statement by Venezky and Osin (1991):

> The core of CAI is an instructional system, something that interacts with a learner and that generally, but not always, follows a script. CAI also involves a verbal exchange, with movement, background, and even, occasionally, music. And like

theater, CAI may have a support system, authoring facility, library, and administrative facilities. But surprisingly enough, the student is not the audience, he is the first actor. Furthermore we have a problem: the first actor does not master his lines, so the company must improvise to keep the performance going. (pp. 119-120)

For a teacher, using CAI-Computer assisted instruction for students' benefit is good. However, without a good design, CAI will not help students achieve their learning goal (O' Neil, Chen, Wainess & Shen, 2008; Stone & Koskinen, 2002).

Human-computer interaction (HCI) is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them. It arose as a field from intertwined roots in computer graphics, operating systems, human factors, ergonomics, industrial engineering, cognitive psychology, and the systems part of computer science (ACM SIGCHI, 2008).

A complete CAI system includes four main subsystems: (1) the instructional facility (2) the administration facility (3) the library includes all the computerized instructional materials in any possible form and (4) the authoring facility serves primarily to create, update, and improve the library (Venezky and Osin , 1991).

Why is CAI used?

CAI is used because of its benefits. There are many benefits using CAI: (1) Self-paced instruction. CAI allows students to practice procedures as long as required to achieve defined competencies, (2) Immediate feedback provided by CAI saves time and prevents learning the "wrong" concepts, (3) Assessment. With CAI, students can determine their own weaknesses and concentrate efforts on overcoming those weaknesses

before moving on more advanced concepts, (4) Good CAI materials reward students instantly for correct responses and behaviors. This encourages students to confidently move to more complex concepts. CAI can make learning interesting and exciting, (5) CAI leaves the instructor more time to work with students on an individual basis and (6) Simulated experiences (Kulik, 1994; Resources for Electronics Training, 2008; Venezky & Osin, 1991).

Another considerable benefit of using CAI is about cost, because "with more modest goals, CAI can be a cost-effective approach to instruction in a wide variety of learning contexts" (Venezky & Osin, 1991, p. 49). Access Center (2008) added another benefit of using CAI, "computer-assisted instruction improves instruction for students with disabilities because students receive immediate feedback and do not continue to practice the wrong skills."

The infinite progress of information and communication technology is a factor that facilitates using CAI, as Arnold (2007) acknowledged:

> A recent development with far ranging implications for CAI is the vast expansion of the Internet, a consortium of interlinked computers. By connecting millions of computers worldwide, these networks enable students to access huge stores of information, which greatly enhances their research capabilities. (p.4)

Ambiguous terms

According to Arnold (2007), it is implied that CAI on the Internet, or CAI on web, or Web-based instruction (WBI), or Web-based training (WBT) still is CAI. Thai Educational Technology (2008) also informed the same content that there are some CAI developments that transform CAI into the format that can be published through the

Internet, which is called Web-based instruction (WBI) or Web-based training (WBT). However, ThaiWBI (2008) argued that WBI is not CAI, but it is an instructional management tool for E-Learning which is a part of E-Education, which is a subsystem of E-Commerce. Mathew and Doherty-Poirier (2008) supported the idea that WBI evolved from CAI:

> Web-based instruction has evolved from any number of computer-based instructional methods, often referred to as Computer-Assisted Instruction (CAI), Computer-aided Instruction (CaI), Computer-Managed Instruction (CMI), Internet-Based Instruction (IBI), or Web-Based Instruction (WBI), but collectively called Computer-Based Education (CBE).

Dabbagh and Bannan-Ritland (2005) pointed out that WBI comes in many forms and incorporates various types of delivery technologies, "ranging from the posting of instructional resources for students, such as syllabi and instructor course notes, to the use of text-based communication tools to promote collaborative discussion and shared activities and documents among learners and instructors" (p. 21).

Stone and Koskinen (2002) explained the relevant term, web-based training:

> Web-based training (WBT) refers to on-line learning delivered over the World Wide Web (WWW) via the public Internet or a private, corporate intranet. Although on-line learning is not actually new – it has been around since the 1960s – it is the Internet's user-friendly interface, coupled with improved technology that has brought the Web into the mainstream of current culture.
>
> WBT is one specific delivery method within the larger category of computer-based training (CBT). Like WBT, the term CBT has evolved along with technological

advancements. Originally, CBT encompassed any training delivered via a computer, but that did not mean much, and CBT did not initially develop into the broad category it was intended to become because there were few practical ways to deliver CBT. In practice, corporations relied almost solely on CD-ROM because of its ability to store large, media-rich files, and the term CBT became almost synonymous with training delivered via CD-ROM.

Therefore, you will hear industry professionals refer to technology-delivered training as "E-Learning." WBT is one of the most popular forms of E-Learning. WBT includes both synchronous and asynchronous instruction. Synchronous WBT includes real-time interactions between instructors and students in virtual classrooms, chat rooms, or on-line videoconferences. Asynchronous WBT includes the use of on-line lessons that students can use anytime and anywhere. The most effective WBT combines both synchronous and asynchronous elements.

As with other forms of E-Learning, the constraints of WBT are diminishing and options are increasing as the Web becomes increasingly easy to use and technology becomes better and less expensive. As the ease of execution increases, corporations are discovering the benefits of delivering training via the Web (pp. XIII-XIV).

The summary of acronyms, names and descriptions of CAI related terms is in the table below.

Table 2
Acronyms, names and descriptions of CAI related terms

Acronym	**Name**	**Description**
PI	Programmed instruction	PI provides computer-based programs consisting of text, graphics, and perhaps multimedia enhancements that are stored and connected to one another electronically. PI may be computer based but it is also found in printed material and interactive videos

CAI	Computer-aided instruction Computer-assisted instruction	CAI refers to any use of computers that interacts with students in any way in the educational process. CAI is the term used for employee training in government sector.
MCAI	MultimediaCAI	CAI that use media that utilizes a combination of different content forms. In general, multimedia includes a combination of text, audio, still images, animation, video, and interactivity content forms.
CAL	Computer-assisted learning	CAL covers a range of computer-based packages, which aim to provide interactive instruction usually in a specific subject area, and many predate the Internet.
CBT	Computer-based training	Learning that uses computers to deliver training. CBT is the term used for training in private industry.
CMI	Computer-managed instruction	The computer is used for administrative functions such as registration, record keeping, scoring, and grading.
ICAI	Intelligent computer-assisted instruction	ICAI system applies principles of artificial intelligence in the representation of domain knowledge, natural language dialogues, and methods of inferences.
ITS	Intelligent tutoring systems	ITS make use of artificial intelligence to provide tutoring that is more advance than ICAI type tutoring.
IBI	Internet-Based Instruction	On-line learning delivered over WWW via the Internet or Intranet.
WBI	Web-Based Instruction	On-line learning delivered over WWW via the Internet or Intranet.
WBT	Web-Based Training	On-line learning delivered over WWW via the Internet or Intranet.
CBE	Computer-Based Education	On-line learning delivered over WWW via the Internet or Intranet.

(Table adapted from Blanchard & Thacker, 1999, Educational technology, 2008, Marquardt & Kearsley, 1999, The Resources for Electronics Training, 2008, Roberts, 1984 and Stone & Koskinen, 2002)

Successful and Unsuccessful Usage of CAI

Successful CAI

Many studies revealed the positive impacts of using CAI. Kuttan and Peters (2003) stated that “where the research exists, it shows that computers have positive effects for disadvantaged students” (p.78). An Educational Testing Service study also discovered that those students working on problem solving rather than drill and practice registered the greatest gains (Wenglinsky, 1998). Schmidt, Weinstein, Niemiec, and Walberg

(1985) found that students learned more in classes in which they receive CAI; the same result was found in Willett, Yamashita, and Anderson (1983). Kulik and Kulik (1991) found that students learned their lessons in less time with CAI; moreover, students developed more positive attitudes toward computers and liked their class more when they receive computer help in them.

The Apple Classrooms of Tomorrow (ACOT) project was originally conceived as a program to study what happens when "tomorrow's" resources are routinely available in classroom (Baker, Gearhart & Herman, 1994). From 1987 through 1990, University of California, Los Angeles (UCLA) conducted a series of evaluation studies focused on five original ACOT sites. Baker, Gearhart and Herman (1994) summarized that the ACOT program appeared as successful in promoting commonly measured student outcomes as more typical instructional programs provided by the comparison sites. ACOT students at least maintained their performance levels on standard measures of educational achievement in basic skills and sustained optimistic attitudes.

Many studies reported the success of CAI, but in a lesser degree. They showed consistency that media have little influence on learning without appropriate instructional strategies (Clark, 1994, 2001, 2005; O' Neil, Chen, Wainess & Shen, 2008).

Unsuccessful CAI

Many researchers have addressed problems associated with CAI. The survey concluded that CAI had been unsuccessful in improving economic education. CAI appeared to generate no more or less cognitive achievement, but probably cost more than conventional pedagogical methods, but CMI was moderately successful (Siegfried and

Fels, 1979). Schenk and Silvia (1984) stated that Siegfried and Fels distinguished two categories of computer instruction:

> Computer assisted instruction (CAI)-"games, simulation models, and demonstration routines."
>
> Computer managed instruction (CMI)-material which is "mainly review routines (short quizzes) with instant feedback to students and individualized instruction to students wanting to know the most efficient study strategy to pursue."(p. 239)
>
> Schenk and Silvia (1984) gave the reasons about ineffective result in using CAI:
>
> One reason for the scarcity of positive results in economics may be that the computer materials, not the method, are poorly developed. Evaluating a set of instructional materials that utilizes a computer involves not just an evaluation of the computer as an instructional tool, but also specific materials and their method of use. There is always a possibility that the material itself may be of poor quality. A second possible explanation of the scarcity of positive results is that even when the computer programs are of good quality, they have been improperly used. (p.240)

Improperly used CAI could be counted as unsuccessful. CAI that was not used was also unsuccessful. Stansberry (2001) stated:

> This question highlights an important dilemma in higher education today: decades ago universities spent very little to equip classrooms with chalkboards, and the majority of faculty members used them a great deal. Today, universities are spending a great deal of their budgets on IT tools, yet the majority of faculty members are still firmly entrenched in the more traditional and less sophisticated

technology tools in instructional delivery, using only the chalkboard or a similar substitute rather than new technologies to enhance teaching and learning (p.7).

How to develop a successful CAI

The Resources for Electronics Training (2008) define CAI as any use of computers that interacts with students in any way in the educational process. The main users are students, so a crucial strategy to make CAI successful is developing the CAI that students prefer to use. It can be summarized in short that "CAI in need is the CAI indeed". Hence, the first step to develop a successful CAI is, knowing students' preferences in CAI.

Moreover, the results of many researches showed consistency that media have little influence on learning without appropriate instructional strategies (Clark, 1994, 2001, 2005; O' Neil, Chen, Wainess & Shen, 2008). So, the second step to develop a successful CAI is using appropriate instructional strategies in CAI software.

Alessi and Trollip (1991) suggested appropriate tricks and tips for producing each mode of CAI. They commented that tutorial CAI should allow the student more than one try to answer a question. They recommended that drill CAI should allow temporary termination at any time based on a student request, and allow restarting. For simulation CAI, do not use overly detailed graphics. Provide just as much detail as is necessary to convey the necessary information. For an instructional game, the producer should make the game the motivator, not the reward. Moreover, the use of violence should be minimized. Test CAI should inform the student of time constraints before the test, let the student know how much time remains during the test, and give detailed feedback after the test.

Rosenberg (1997) gave an acute comment that “technology will not be effective unless the people issues are taken into account in a meaningful way” (p. 189). The design of CAI is another important thing. Stone and Koskinen (2002) stated that CAI products are commonly converted for use in different countries. In designing CAI, cultural differences must be considered. Stone and Koskinen (2002) noted “Colors, slang, humor, gestures, units of measure, law, taboos, and etiquette and among the elements that must be evaluated and, if necessary, modified” (p. 180). They further explained the concept about colors and language:

> In China, for example, red is the most popular and auspicious color. Some believe that it helps to keep evil away. By contrast, those from a European cultural background may associate red with evil (e.g., a red devil). For the Chinese, yellow connotes royalty, prosperity, and luck. However, for English speakers, yellow denotes cowardice and weakness.
>
> When an American beer company translated into Spanish its advertising slogan to “Get Loose,” the advertising agency failed to realize that the translation was a Mexican colloquialism that means to have diarrhea.(p.180)

Obviously, cultural differences must be considered circumspectly in designing CAI.

Theoretical Framework

A framework that used to explain interrelationship of student learning preferences and CAI instruction is a cultural theory of organization or Douglas’s Typology of Grid and Group. One important thing that we should know is culture, and then we can understand why cultural theory can help in explaining students’ preferences in CAI.

What is Culture?

There are hundreds of different ways to define culture (Adler, 1986; Weaver, 2000). Culture is "a system of interrelated parts and it is shared with others. People in the same society have roughly the same values, beliefs, behaviors, perceptions of reality and ways of communicating. Culture causes this to happen" (Weaver, 2000, p. 72). Culture is "that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (Tyler, 1920, p.1). Adler and Jelinek (1986) stated that "culture, whether organizational or national, is frequently defined as a set of taken-for-granted assumptions, expectations, or rules for being in the world" (p. 126). Kroeber and Kluckhohn (1952) gave the most commonly used definition of culture:

> Culture consists of patterns, explicit and implicit of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of further action (p. 181).

We can explain why people behave as they do if we have a more comprehensive understanding of their culture. The influence of culture can be looked at as a circle. Culture affects values, which affect attitudes, which affect behavior, which in turn affects the culture itself (Rhinesmith, 1970). However, although the influence of the collective culture within a particular ethnic group can be significant, it is not all-determining. Individual differences exist within all cultures (Adler, 1986). Cultural descriptions are

never intended to describe perfectly the behavior of any single member of the group. But "cultural descriptions strictly describe central tendencies, or norms. Cultural descriptions portray what the majority of people do, not what all people do" (Adler, 1986, p. 118).

Besides the popular term "culture", the terms "climate," and "ethos" also describe the same organizational phenomenon (Peterson & Deal, 2002). While culture is a concept, we know that it exists based upon inference. We infer that people have a particular set of values or beliefs when we examine their artifacts (Weaver, 2000). Hall (1976) suggested that culture is like an iceberg, the tip (or external culture) is really the smallest part. The internal culture is the largest part which is inside our heads and unconscious – beneath the water level of awareness. Internal culture or "mind" is dominant over external culture. If we want to understand what motivates behavior, we must explore internal culture (Weaver, 2000).

The culture influences and shapes the way students, instructors, and administrators think, feel, and act. Peterson and Deal (2002) listed many aspects of the social expectations and values of the staff in a school:

Whether they think improvement is important

How motivated they are to work hard

How they feel when students do not perform well

How they act in hallways, lounges, and at faculty meetings

How they dress for different occasions

What they talk about in public or in private

The degree of support they give to innovative colleagues

Whom they go to for ideas or help

How they feel about their students and colleagues who are different

Whether they assume student learning capacity is determined by background

The degree to which student learning is dependent on teaching and the curriculum

Whether they believe collaboration and teamwork is a good thing

Whether state standards are potentially useful

Whether they see their daily work as a calling or a job

Every aspect of the school is shaped, formed, and molded by underlying symbolic elements. Although not all cultural aspects are easily shaped by leaders, over time leadership can have a powerful influence on emerging cultural patterns. Being reflective can help reinforce cultural patterns that are positive and transform those that are negative or toxic.(pp.9-10)

Culture is a powerful web of rituals and traditions, norms, and values that affects every corner of school life. School culture influences four crucial issues: focus, commitment, motivation, and productivity. It influences what people pay attention to, how they identify with the school, how hard they work, and the degree to which they achieve their goals (Deal and Peterson, 1999). The key features of culture composed of (1) a share sense of purpose and vision, (2) norms, values, beliefs, and assumptions, (3) rituals, traditions, and ceremonies, (4) history and stories, and (5) architecture, artifacts, and symbols (Peterson and Deal, 2002). One of the key tasks of leaders is shaping culture (Schein, 1985) through many daily interactions, watchful reflection, and conscious efforts to lead people to a better future.

Cultural theory

Grid and group analysis, a cultural theory of organization, is a conceptual framework for examining organizations and change (Gross & Rayner, 1985; Ellis, 2006). It was offered by a social anthropologist Mary Douglas (Douglas, 1982). Harris (2005) explained that Douglas's typology of grid and group "provides a matrix to classify school contexts and draw specific observations about individuals' values, beliefs, and behaviors" (p. 33). According to the typology, there are "four, and only four, distinctive school contexts in which one may find him or herself, and only two dimensions, grid and group, which define each of those four prototypes" (Harris, 2005, p. 34).

Grid dimension

Grid is a dimension of individualization of members in the organization, and group is a dimension of social incorporation of members in the organization (Douglas, 1982). The grid dimension refers to the degree of limitation of choices by an individual based on the social constraints of the organization's imposed rules, role expectation, management, and procedures (Harris, 1995). Harris (2005) explained that "In Douglas's frame, grid refers to the degree to which an individual's choices are constrained within a social system by imposed prescriptions such as role expectations, rules, and procedures" (p. 34).

In summary, grid refers to the degree to which individuals are constrained by role differentiation, rules, and expectations. On the grid continuum, high-grid educational contexts are those in which role and rule dominate individual life choices, and low-grid environments are characterized by individual autonomy and freedom in role choices. (Harris, 2005, p. 36)

Some of the salient features of grid can be seen in figure 2.

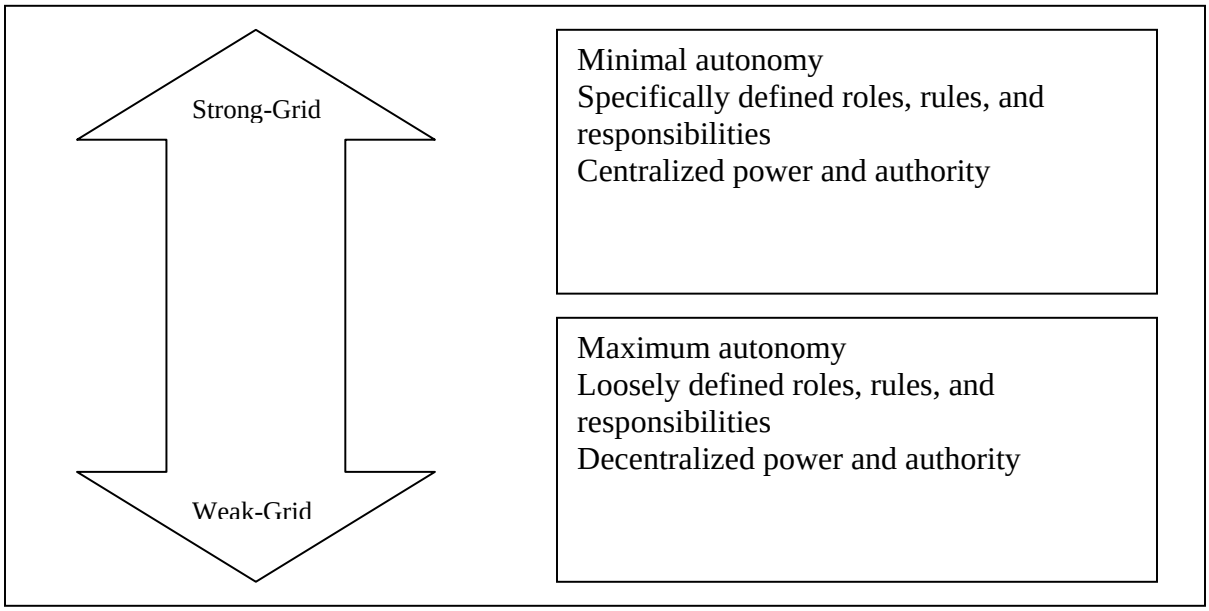

Figure 2. The Grid Dimension
From "Understanding the Culture of Schools," by E. L. Harris, 2005, Key Strategies to Improve Schools, Lanham, Maryland: Rowman & Littlefield Education, p.37. Used with permission of the author.

Group dimension

Lingenfelter (1996) noted that group refers to "the degree to which people value collective relationships with one another and define those relationships in terms of insider/outsider distinctions" (p. 24). Harris (2005) also explained that "group represents the degree to which people value collective relationships and extent to which they are committed to the larger social unit" (p. 36). Group can be measured by the requirements on the individual to adapt and to comply with group expectations (Spickard, 1989).

In strong-group social environments, specific membership criteria exist, and explicit pressures influence group relationships. The survival of the group is more important than the survival of individual members within it…Strong-group environments are typically replete with prominent signs that display member allegiance…Strong-group environments value the continued existence of the school, and weak-group contexts value individual interest over the priority of collective arrangements (Harris, 2005, pp. 36-38).

Some pertinent features on the group continuum can be seen in figure 3.

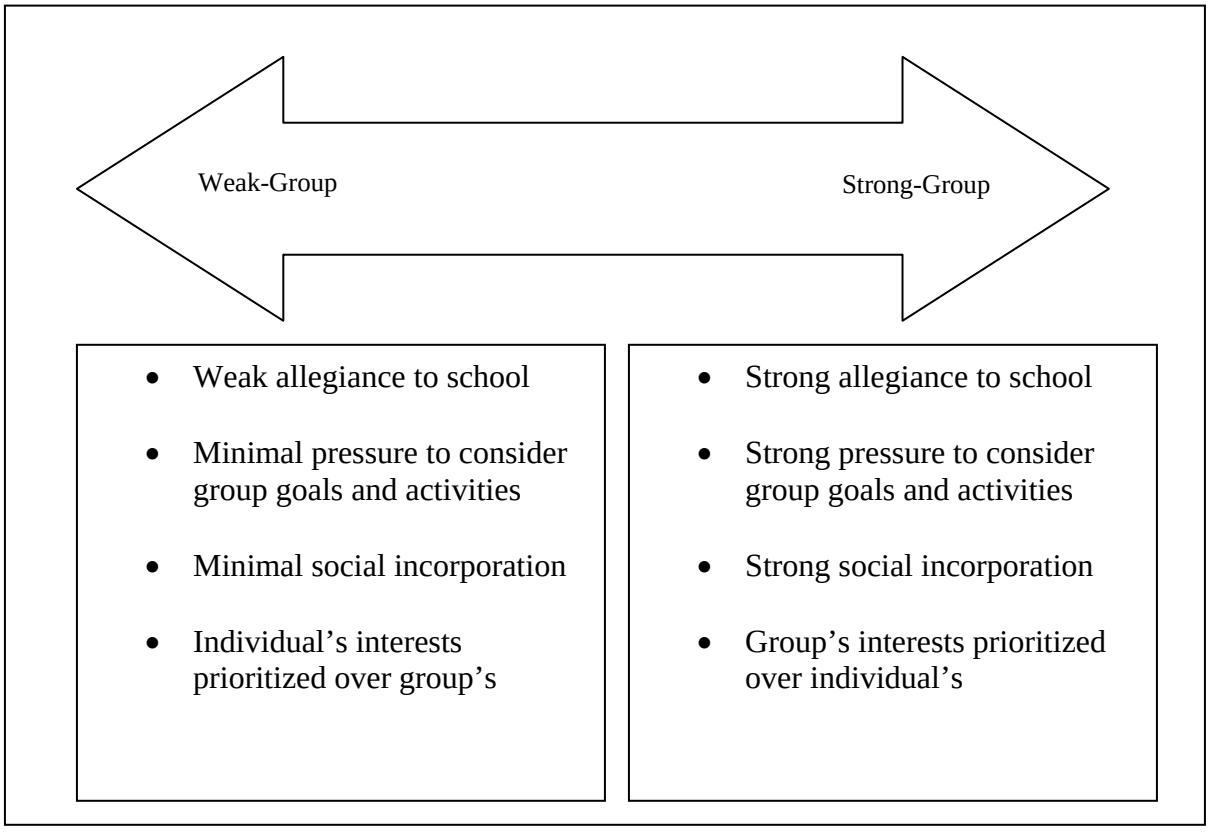

Figure 3. The Group Dimension
From "Understanding the Culture of Schools," by E. L. Harris, 2005, Key Strategies to Improve Schools, Lanham, Maryland: Rowman & Littlefield Education, p.39. Used with permission of the author.

When simultaneously considering high or low strength in both grid and group dimensions, Douglas's four distinct possibilities of social contexts emerge (Chitapong, 2005) as displayed in figure 4.

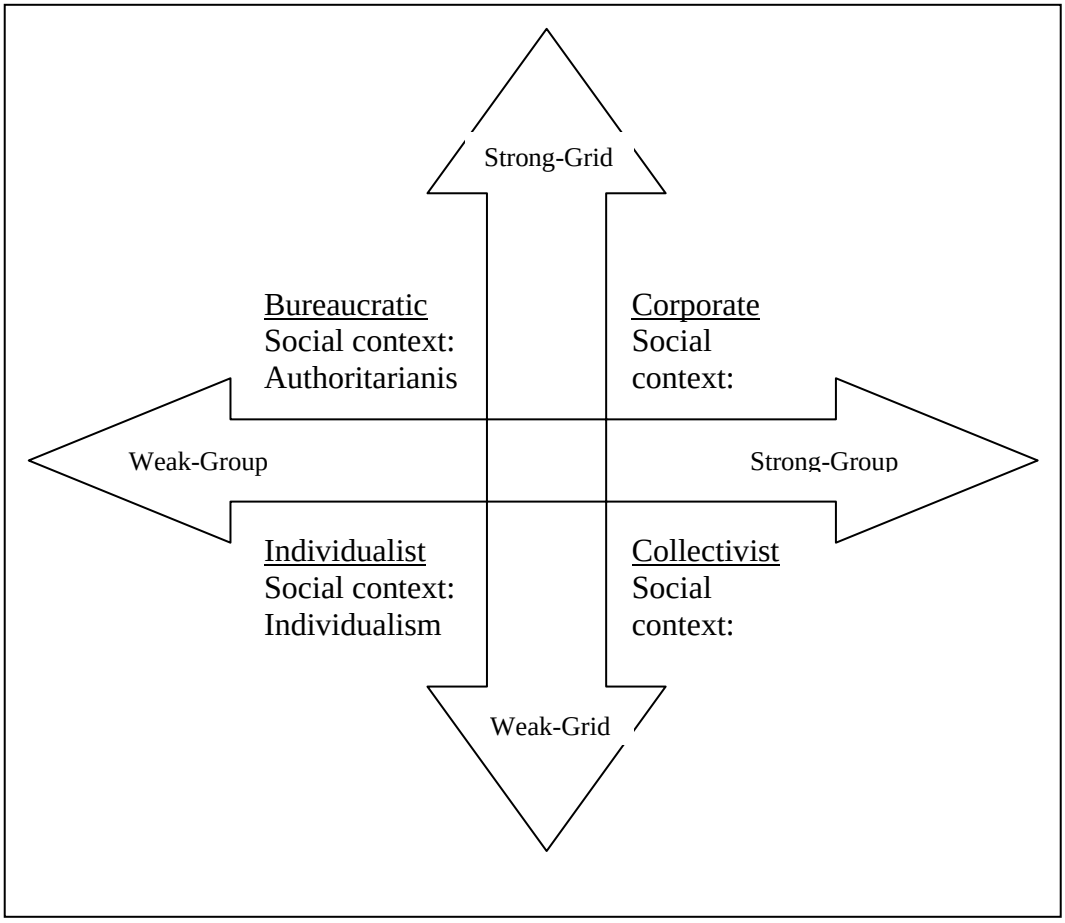

Figure 4. Types of social environments and their social contexts
From "Understanding the Culture of Schools," by E. L. Harris, 2005, Key Strategies to Improve Schools, Lanham, Maryland: Rowman & Littlefield Education, p.41. Used with permission of the author.

Douglas's grid and group typology is a combination of grid dimension and group dimension. Figure 4 categorizes the four social contexts with their respective grid and group environments, and each social context has its distinctive characteristics:

1. Bureaucratic environments (strong-grid and weak-group)
2. Individualist environments (weak-grid and weak-group)
3. Corporate environments (strong-grid and strong group)
4. Collectivist environments (weak-grid and strong group)

Ellis (2006) summarized that "these four systems are important to educators in understanding the structure of their classroom and the roles and relationships of the students (the culture)" (p. 36). This understanding can be helpful in resolving conflicts and creating a conductive classroom learning environment. Douglas (1982) identified the quadrant that best describes social context. Chitapong (2005) stated that "in analyzing an individual's preferences, grid and group typology does not assume the preferences, or choice, are predetermined. The method takes into consideration the cumulative effect of individual choices on the social situation itself" (p. 14). Douglas (1982) explained undoubtedly that "both can interact, the individual and the environment, and either can move because the environment is defined to consist of all the other interacting individuals and their choices" (p. 198). The more concise and complete summary of all four social contexts in four quadrants is listed below:

Bureaucratic environment

1. In the extreme, the individual has no scope for personal transactions.
2. There is little individual autonomy.
3. Roles and rules are defined without ambiguity.
4. Group goals and survival are not important.
5. The environment is hierarchical with predominately set criteria.

Individualist environment

1. The social experience of the individual is not constrained by group rules or traditions.
2. Role status and rewards are competitive and based on merit.
3. There is little distinction between individual role statuses.
4. Long-term group survival is not emphasized.

Corporate environment

1. The group maintains boundaries against outsiders that limits social relationships and experiences of its members.
2. The individual's identification is derived from group membership.
3. Individual behavior is subject to controls exercised in the name of the group.
4. A hierarchy pyramid of role levels exists with greater individual power at the top of the pyramid.
5. Group survival and perpetuation of tradition are of utmost importance.

Collectivist environment

1. The individual's identification is granted through group membership.
2. Individual behavior is subject to controls exercised in the name of the group.
3. Authoritarian leadership and hierarchy are rejected.
4. The perpetuation of group goals and group survival is of utmost importance.

Douglas's (1982) framework enables the researcher to analyze specific organizations that are influenced by grid and group considerations. The advantage of this grid and group typology lies in its potential to help explain individual preferences within the cultural context of a particular setting.

Summary

The use of CAI in education is increasing and creating unique learning cultures in higher education environments. Even though the forms of media are more different from the past, the concept of CAI is still the same – to use computer as aids for instructional purposes.

One important thing that we should not neglect is that students are the consumers of CAI, and they should gain knowledge from CAI by using it by themselves. Glasser (1998) reminds that we learn 10 percent of what we read, 20 percent of what we hear, 30 percent of what we see, 50 percent of what we both see and hear, 70 percent of what we discuss with others, and 80 percent of what we experience personally. An important role of teachers is to assist students to be happy to learn, which will make students gain knowledge joyfully and realize that they can get education and entertainment, Edutainment, in the same time. But how can teacher encourage students to use CAI willingly. The answer is that teacher must know students' preferences in CAI. Mary Douglas (1982) states that peoples' cultural preferences affect how they learn as well as what they are interested in learning.

CHAPTER III

METHODOLOGY AND PROCEDURES

This chapter describes the methodology and data collection procedures used to complete the study. The selection of methodology and data collection procedures depended on the type of study pursued (Stansberry, 2001). Since this study featured closed interaction with participants and their preferences of specific situations, processes, and occurrences, qualitative research was the most appropriate.

Methodology

In the literature, qualitative research is referred to by many terms, including naturalistic inquiry, ethnographic research, field research or field work, unobtrusive measures, observation, grounded theory research, and interpretive procedures (Glazier & Powell, 1992). Qualitative research employs methods of data collection and analysis that are non-quantitative, aims towards the exploration of social relations, and describes reality as experienced by the participants (Adams, Khan, Raeside, & White, 2007). A questionnaire, interviews, observation, and archives collection in this study allowed the researcher to develop a "picture" of participants' experiences and perceptions. These experiences and perceptions were then analyzed to form a description of a specific situational phenomenon, or a case study (Stansberry, 2001).

Case studies are one of the most popular methods of conducting social science research (Burton, 2000). There are many definitions for the term "case study

research." Becker (1968) gave the definition of case study as participant observation of groups and group behavior. Runyon (1982) stated that case study is the presentation and interpretation of detailed information about a single subject, and event, culture or individual. Doing case studies means "making extensive observations of a single group or person" (Graziano & Raulin, 2004, p. 124). The case study "provides an opportunity for the intensive analysis of many specific details often overlooked by other methods" (Kumar, 2005, p. 113).

In order to make the study rich and thick, the researcher used case study. Yin (1994) defined case study research is as an empirical enquiry that investigates a contemporary phenomenon in context. When the boundaries between the phenomenon and the context are not clearly evident, multiple sources of evidence are used. Yin (1994) presented five reasons the case study is a particular good means of educational research. Those five reasons can be called "DEEPS" for easy remembrance. The case study research has the ability to describe, explore, exemplify, provide a meta-evaluation, and surmise: (1) describe the real-life context in which an intervention occurs; (2) explore situations in which an intervention exists but has no clear, set outcomes; (3) exemplify specific topics in a descriptive mode; (4) provide a meta-evaluation—a study of an evaluation study; and (5) surmise causality among complex, real-life interventions.

Graziano and Raulin (2004) described that case study is research in which minimal constraints are placed on participants' behavior. By placing constraints, case studies narrow the focus, but "retain the essential interest in participants' natural behavior" (p. 129). Yin (1994) defined case studies as "an all-encompassing method – with the logic of design incorporating specific approaches to data collection and to data analysis" (p. 13).

The case study report involves an investigator who makes a detailed examination of a single subject, group, or phenomenon. However, the case study should not be confused with a narrative, which is "much less complex than a case study and is written from one viewpoint" (Erlandson et al., 1993, p. 163).

According to Yin (1994), there are three types of case studies – descriptive, explanatory, and exploratory. Each type has distinctive characteristics, but there is an overlap among them. Descriptive case study attempts to "describe systematically a situation, problem, phenomenon, service or program, or provides information about, say, the living conditions of a community, or describes attitudes towards an issue" (Kumar, 2005, p. 10). Explanatory case study attempts to "clarify why and how there is a relationship between two aspects of a situation or phenomenon" (Kumar, 2005, p. 10). Exploratory case study is "undertaken with the objective either to explore an area where little is known or to investigate the possibilities of undertaking a particular research study" (Kumar, 2005, p. 10).

This study was considered an explanatory case study because its main objective was to explain the educational culture of the Faculty of Management Sciences at PSU, exploring both instructors and students cultural context. The purpose of this study was to provide explicit experiences of the educational culture of FMS, to describe the students' and instructor's preferences in CAI, to describe CAI practices in FMS. Moreover, the study introduced guidance for future consideration about providing appropriate CAI for students.

Data Collection Procedures

The population in this study consisted of 62 instructors and 2270 students of the Faculty of Management Sciences. There are two departments in the faculty, which are the Department of Business Administration and the Department of Public Administration.

There are five majors in the Department of Business Administration: (1) Information Technology Management, (2) Human Resource Management, (3) Marketing, (4) Finance and, (5) Accounting. There are three majors in the Department of Public Administration: (1) Public Policy, (2) Rural Administration, and (3) Human Resource Management. Each department was administered independently. Students in each major had their own characteristics.

Protection of Human Subjects

The researcher asked for permission from the Dean to conduct the research at FMS. The researcher met the instructors and students of FMS, and asked for their permission to participate in the study.

Instrumentation

The researcher used *Grid and Group Cultural Preference Tool* as questionnaires for students and for instructors. They were online questionnaires adapted from the survey instrument constructed by Harris (2005). The English version of the instrument for students and instructors can be seen in Appendix C and Appendix E respectively. It has been used several times in schools located in the United States (Harris, 2005) and also in Thai school context (Chitapong, 2005). The researcher received permission from Harris (2005) to use this instrument in the study conducted at FMS in Thailand. The researcher translated the survey from English to Thai; then Mrs. Sinlapamethakul translated it back

to English to assure that translation corresponds the original version. The Thai version instrument for students and instructors can be seen in Appendix D and Appendix F respectively.

After the researcher developed a questionnaire for students and a questionnaire for instructors, 5-10 students and 2-3 instructors were asked to participate in the pilot study of the questionnaire. A pilot study is a small-scale trial of the proposed procedures. Its purpose is to "detect any problems so that they can be remedied before the study proper is carried out" (Fraenkel & Wallen, 1993, p. 470). Gay (1990) stated the benefit of the pilot study is that "even a small-scale pilot study, based on a small number of subjects, can help in refining procedures, such as instrument administration and scoring routines, and in trying out analysis techniques" (p. 90). The pilot study occurred in June 2008. The results of the pilot study ended up with no changes to the instrument.

Data needs

The data needed in this study are the expression of beliefs and values about personal preferences of each individual student and instructor on CAI, including teaching strategies, and teaching environment.

Data sources

Participants of the study were FMS students and instructors. The data sources were organized in two stages. At the first stage, all students and instructors of FMS who wanted to participate in this study became data sources. At this stage 133 students answered the online questionnaire for students and 39 instructors answered the online questionnaire for instructors. At the second stage, 14 students and 9 instructors were chosen from the first group of participants. A purposive sampling technique was used.

Purposive sampling requires a procedure that is "governed by emerging insights about what is relevant to the study based on the focus determined by the problem and purposively seeks both the typical and divergent data to maximize the range of information obtained about the context" (Erlandson et al., 1993, p. 148). An in-depth interview method was used at this stage. Observations were done for the general environment of the setting, for example, how many classrooms were there? How many computer lab rooms were there? Can students access the Internet easily? Moreover, there were 2 classrooms observations. In addition to the participants, the documents or artifacts related to CAI such as teaching materials, brochure, news of the FMS, field notes were taken into account as valuable data sources.

Data Collection

Creswell (1994) explained that the data collection procedures in a qualitative design are composed of " (a) setting the boundaries for the study, (b) collecting information through observations, interviews, documents, and visual materials, and (c) establishing the protocol for recording information" (p. 148). The target populations were undergraduate students and the faculty of Management Sciences (FMS), Prince of Songkla University (PSU). They were asked to be volunteers in this study. The exploratory research was conducted in the third week of the first semester of the year 2008 (from June 16, 2008 to July 11, 2008). It lasted for four weeks.

The researcher asked for permission from the Dean of FMS to do the study. Students who volunteered to be a participant went to a website to answer the *Grid and Group Cultural Preference Tool* questionnaire which was already uploaded to the website. The address for the instructors' questionnaire was available on another website.

Even though the main part of both questionnaires was the same, the *Grid and Group Cultural Preference Tool*, the needed demography for students and instructors were different. Therefore the researcher put the questionnaires in different websites. The participants in the first phase composed of 120 students. The researcher used *Grid and Group Cultural Preference Tool* as an instrument to classify participants in the quadrants, and from each quadrant, the researcher purposively selected participants from each quadrant for a qualitative interview.

Fourteen students and 9 instructors were selected for interview. A Thai consent form giving permission to be interviewed was given to each participant. All interviewed participants were encouraged to give honest information to the interview questions. The interview process provided the interviewees with the opportunity to discuss their experiences, attitudes and preferences about CAI, pattern they like most as instructors and students, and other general information about CAI. The interview questions can be seen in Appendix I.

The researcher got the data about FMS students and instructors cultural contexts using questionnaires. The researcher got the data about students and instructors cultural contexts from interviews with the key informant participants too. There are three alternatives for interviewing which are (1) the informal conversational interview (2) the general interview guide approach, and (3) the standardized open-ended interview (Patton, 2002). Themes extracted from questionnaires and interview texts were triangulated with FMS documents and observation of the research settings. Moreover the researcher also became one of many instruments, as Erlandson et al. (1993) stated, “the researcher him- or herself becomes the most significant instrument for data collection and analysis” (p.

39). Interview excerpts were aligned with the grid and group typology, using Douglas's (1992) criteria.

The Survey Instrument

The questionnaire survey study occurred in the third through the sixth week of the first semester of the year 2008 (from June 16, 2008 through July 11, 2008). This time period was chosen because it was an appropriate time for the students. They could settle all their subjects at least in the third week, and the last day of the second week was the last day that students can add up or withdraw subject with the money refund. The eighth week would be a midterm exam and the final exam was on the sixteenth week.

The researcher uploaded the *Grid and Group Cultural Preference Tool* questionnaire to the website http://frontpage.okstate.edu/coe/aree1 for students and http://frontpage.okstate.edu/coe/aree2 for instructors. The participants who volunteered completed the instruments from that website. The researcher then analyzed the data on the questionnaires that could explain classroom culture. Culture is a human creation comprised of human interactions and relationships with all of their complexities and flaws (Harris, 2005). FMS culture can be analyzed. As Harris (2005) stated, "a school district, a school site, or an academic classroom can each be viewed as a unit of analysis for a social system" (p. 33). The researcher used Douglas's typology of grid and group to classify classroom contexts and draw specific observations about the individuals' values, beliefs, and behaviors. The researcher then categorized which one of the four prototypes the classroom culture should fit in. The English version survey instrument for students and instructors can be seen in Appendix C and Appendix E respectively. The Thai

version of the survey for students and instructors can be seen in Appendix D and Appendix F respectively.

Interviews

After the survey data of phase 1 were gathered and plotted on the grid/group quadrant, twelve students (two from each quadrant of social context) were contacted to set up a qualitative interview schedule. All of them were willing to provide the needed valuable information. The interview took place on site; all the interviewees had completed the survey. Each participant was previously given a Thai consent form. All interviewed participants were encouraged to give honest information to the interview questions. The interview process provided the researcher with the opportunity to discuss the learning preferences of students and the teaching preferences of instructors. Interview questions can be seen in Appendix I.

Document analysis

Document and artifact analyses or archives collection such as gathering field notes, brochures, website of the setting was a method that helped in discovering remarkable findings. Erlandson et al. (1993) listed possible examples of documents: “historical or journalistic accounts, works of art, photographs, memos, accreditation records, television transcripts, newspapers brochures, meeting agendas and notes, audio or videotapes, budget or accounting statements, notes from students or teachers, speeches, and other case studies” (p. 99).

At the beginning of the study, the most public and easily accessed documents were gathered. The Faculty of Management Sciences website (http://www.mgt.psu.ac.th) was accessed and analyzed. Brochures in the office of the faculty secretary, the Department of

Business Administration, and the Department of Public Administration were collected and analyzed. During each of the interviews, participants were asked if they would provide documents such as course descriptions, press releases, and descriptions of information technology tools, that would contribute to the study.

Observations

Two crucial strategies used in this study were observations of students' interactions, instructors' interactions, and collection of field notes. Weimer (1979) noted that observation is "a skill over and above passive reception of the raw data of sensory experience" (p. 21). Patton (2002) stated that the purpose of observation analysis is to take the reader into the setting that was observed, which means that "the reader can understand what occurred and how it occurred" (p. 23). Another important research tool used in participation observation was "a notebook into which you enter your observations" (Dane, 1990, p. 161), the field journal. Field notes in the field journal were taken during observations and used for analysis along with interviews and documents.

The summary of methods used is presented in the table below.

Table 3
Methods used for data collection

Method	**Overall purpose**	**Advantages**	**Challenges**
Online survey	To obtain measurable data within time constraint.	Easily obtained large amounts of data. Very inexpensive Less time consuming and easy to analyze	Systematic (nonsampling error), which is error resulting from some imperfect aspect of the research design that causes response error or from a mistake in the execution of the research; error that comes from such sources as sample bias, mistakes in recording responses, and nonresponses from persons not contacted or refusing to participate.
Interview	To gather	Allowed researchers to	Interviewer error, which is

	qualitative information that cannot directly observe.	gather additional information that could not be captured in the survey. Allows interaction amongst the participants.	administrative error caused by failure of an interviewer to perform tasks correctly.
Document analysis	To constitute part of the repertoire of field research	Documents prove valuable not only because of what can be learned directly from them but also as stimulus for paths of inquiry that can be pursued only through direct observation and interviewing.	Learning to use, study, and understand documents and files is part of the repertoire of skills needed for qualitative inquiry.
Observation	to take the reader into the setting that was observed	Direct data collection. It directly records what people do, as distinct from what they say they do.	Behavior, not intentions. Its focus on overt behavior describes what happens, but not why it happens. It does not deal with the intentions that motivated the behavior.

(Table adapted from Denscombe, 2007, Kelsey, 2005, Patton, 2002 and Zikmund, 2000)

Data Analysis

Data analysis happened in the same time of data collection as Erlandson et al. (1993) explained, "the analysis of the data gathered in a naturalistic inquiry begins the first day the researcher arrives at the setting" (p. 111).

Multiple methods were triangulated in this study to improve the validity of the measurement. Fitzpatrick, Sanders and Worthen (2004) explained triangulation as the term "coined to refer to the process of using multiple methods to measure a construct validly." (p. 305). Validity, in the most basic sense, refers to how true or accurately claims or important concerns are measured (Burns & Grove, 1997). Erlandson et al. (1993) also added up that "different questions, different sources, and different methods should be used to focus on equivalent set of data. Alternative explanations should be considered" (p. 31). Two important concepts in educational research are validity and reliability. Validity refers to the appropriateness, meaningfulness, and usefulness of the

inferences researchers make based on the data they collect, while reliability refers to the consistency of these inferences over time. Fraenkel and Wallen (1993, p. 400) listed many valuable procedures for checking on or enhancing validity and reliability including the following:

1. Using a variety of instruments to collect their data. This kind of checking is often referred to as triangulation.
2. Checking one informant's descriptions of something against another informant's descriptions of that same thing.
3. Learning to understand and speak the vocabulary of the group being studied.
4. Writing down the question they ask.
5. Recording their own thoughts as they go about their observations and interviews.
6. Documenting the sources of remarks whenever possible and appropriate.
7. Documenting the bases for inferences they make.
8. Describing the context in which questions are asked and situations are observed.
9. Using audiotapes and videotapes when possible and appropriate.
10. Drawing conclusions based on one's understanding of the situation being observed and then acting on these conclusions.
11. Interviewing individuals more than once.
12. Observing the setting or situation of interest over a period of time.

This study followed most of these procedures. It used a variety of methods to collect data, which were surveys, interviews, observations, and document analysis.

Data obtained from survey were analyzed using Microsoft Word 2003 and Microsoft Excel 2003. Even though there were many statistical packages that can be used for analyzing. It was the researcher's personal preference to use Excel. The researcher followed the scoring procedures and plotting procedures stated in Harris (2005). In the scoring procedure, the researcher used average function of Excel to calculate average of grid scores and group scores. In plotting procedures, the researcher inserted chart XY (Scatter), each point for each participant. Finally, the researcher knew FMS students and FMS instructors' preference cultural context as Harris (2005) stated, "you will likely see a dominant theme based on a stronger cluster of points in one of the four quadrants" (p. 79).

According to Lincoln and Guba (1985), "Data analysis involves taking constructions gathered from the context and reconstructing them into meaningful wholes."(p.333). Erlandson et al. (1993) summarized:

> This process has three elements: (1) unitizing data, (2) emergent category designation, and (3) negative case analysis. A fourth element is added to analysis that is done between periods of data collection: (4) bridging, extending, and surfacing data (p.116).

According to Erlandson et al. (1993), unitizing data, "may be defined as disaggregating data into the smallest pieces of information that may stand alone as independent thoughts in the absence of additional information other than a broad understanding of the context" (p. 117). Emergent category designation, "involves taking all of the units of data and sorting them into categories of ideas" (p. 118). Negative case analysis, "involves addressing and considering alternative interpretations of the data"

(p.121).

The researcher entered the verbatim transcript of each interview into Word. The researcher read each interview. If a new theme emerged, the researcher put it in new column. Each row represented the information from each participant. With this procedure, the researcher categorized the data according to an emergent classification system.

The survey responses provided primary data to understand the cultural context of the selected setting (FMS). Using Douglas's (1982) grid and group typology, data collected through interviews, observations, and document analysis reinforced classroom's placement into an appropriate quadrant of cultural context.

The summary of data collection methods and data analyses which relate to each research question is in table 4.

Table 4

Research Questions, Data Collection Methods, and Data Analyses

Research Question	Data Collection	Data Analysis
1. How does Douglas's typology explain the educational culture of the FMS at PSU?	1. Interviews with FMS students and FMS instructors	1. Uncover themes in verbatim transcript
	2. Observation	2. Field notes written immediately after observation
	3. Document, artifact, and web page information regarding school cultural environment	3. Study of documents, web pages, and artifacts that provide insight into school culture

2. What are the students and instructors attitudes toward CAI?	1. Interviews with FMS students and FMS instructors	1. Uncover themes in verbatim transcript
	2. Observation	2. Field notes written immediately after observation
	3. Document, artifact, and web page information regarding school cultural environment	3. Study of documents, web pages, and artifacts that provide insight into students and instructors attitudes toward CAI
3. What is the interrelationship of CAI practice and educational preferences among the students and the faculty?	1. Interviews with FMS students and FMS instructors	1. Uncover themes in verbatim transcript
	2. Observation	2. Field notes written immediately after observation
	3. Document, artifact, and web page information regarding school cultural environment	3. Study of documents, web pages, and artifacts that provide insight into students and instructors practices in CAI
	4. *Grid and Group Cultural Preference Tool* (Harris, 2005)	4. Scores from FMS students' and FMS instructors' responses plotted on vertical and horizontal axes to determine preference foe cultural environment, using Douglas' (1982) Cultural Theory
4. How useful is Douglas's typology of grid and group in understanding this interrelationship?	1. Interviews with FMS students and FMS instructors	1. Uncover themes in verbatim transcript

	2. Observation	2. Field notes written immediately after observation
	3. Document, artifact, and web page information regarding school cultural environment	3. Study of documents, web pages, and artifacts that provide insight into students and instructors practices in CAI
	4. *Grid and Group Cultural Preference Tool* (Harris, 2005)	4. Scores from FMS students' and FMS instructors' responses plotted on vertical and horizontal axes to determine preference foe cultural environment, using Douglas' (1982) Cultural Theory
5. What other realities are revealed in this study?	1. Interviews with FMS students and FMS instructors	1. Uncover themes in verbatim transcript
	2. Observation	2. Field notes written immediately after observation
	3. Document, artifact, and web page information regarding school cultural environment	3. Study of documents, web pages, and artifacts that provide insight into students and instructors practices in CAI
	4. *Grid and Group Cultural Preference Tool* (Harris, 2005)	4. Scores from FMS students' and FMS instructors' responses plotted on vertical and horizontal axes to determine preference foe cultural environment, using Douglas' (1982) Cultural Theory

CHAPTER IV

PRESENTATION OF DATA

This study was conducted at Prince of Songkla University (PSU) in the southern part of Thailand in the first semester of 2008. The study had three overlapping purposes. The first purpose was to use Douglas's typology to explain the educational culture of the Faculty of Management Sciences (FMS) at PSU. The second was to describe the students' and faculties' preferences about Computer Assisted Instruction (CAI) in FMS. The last purpose was to describe CAI practices in FMS.

Lingenfelter (1996) recommends that if one desires to understand the people, the society, and the culture of a group, it is essential that he or she engage in a program of systematic observation and research, focusing on five interrelated features of the social environment: (1) the playing field (space) (2) the players (people) (3) the rules of the game (relationships) (4) the game (activities) and (5) the calendar (time). Data collected through online questionnaires, interviews, observations and documents from FMS are presented in this chapter in a case study format.

Prince of Songkla University

Prince of Songkla University was established in 1967 as the first university in southern Thailand. The university's early years were characterized by a steady expansion of academic disciplines and establishment of high academic standards. Today, PSU is considered to be one of the most highly accredited institutions throughout Thailand (Prince of Songkla University, 2007).

The name “Prince of Songkla” was bestowed upon the university by His Majesty King Bhumibol Adulyadej in honor of his late father, His Royal Highness Prince Mahidol of Songkla, who is known as “The Father of Modern Medicine” in Thailand (Prince of Songkla University, 2005). His Royal Highness Prince Mahidol of Songkla expressed his wish that all who are affiliated with PSU should be imbued with a sense of gratitude and each person should “let consideration of personal gains take second place to the overall benefit of mankind; prestige and prosperity are the natural rewards of dedication to work” (Prince of Songkla University, 2005, p. 3). PSU has five campuses located in Hatyai, Pattani, Phuket, Surat Thani and Trang. Each campus not only serves the needs of the local communities but also offers variety of fields of study to serve the development of the nation as a whole.

As a multi-campus university, PSU has its own administrative system, which may be different from other campuses in Thailand. According to the PSU Act, the university council, comprising of well-known scholars in various fields and politicians, played a key role in guiding and supervising the university affairs both administratively and academically. The Ministry of Education has decentralized its authority to university council in many ways. For example, the university council has full authority to approve courses or degrees offered by the university. Establishment of a new department, even faculty, has to be approved by this body. PSU president acts as a secretary-general in the University Council board. Within the university, the executive staff led by the president administers the university. The president, who is officially appointed by the King, appointed a number of vice presidents and deputy presidents, to be responsible in various university affairs and campus branches.

Under the 2008 administration, there are six vice presidents who were assigned to bear the responsibility for different affairs, such as, academic, students', and planning. Every vice president has to report the progress to the president on the assigned responsibilities. As PSU has five campuses, each campus has its own campus vice president to manage and oversaw campus affairs.

Likewise, the other campuses have their respective vice presidents. They work like a president in the respective campuses because he or she was given certain authority from the president in making decision administratively and academically. The role of the president is to coordinate, monitor, and create connections among these vice presidents and makes final decision on certain matters. In each campus, there is a set of executive members to handle various campus affairs, comprising of vice presidents and deputy presidents. The number of the executive team depends on how large the campus is.

All the executive members ranking from president, vice presidents, deputy presidents, and school deans from 28 faculties of all five campuses had a monthly meeting called a "Dean Meeting." The meeting was scheduled to rotate the meeting venue from one campus to another. Even the location of each campus was far apart. These administrators were obliged to attend the meeting. Figure 5 depicts the organizational structure of PSU.

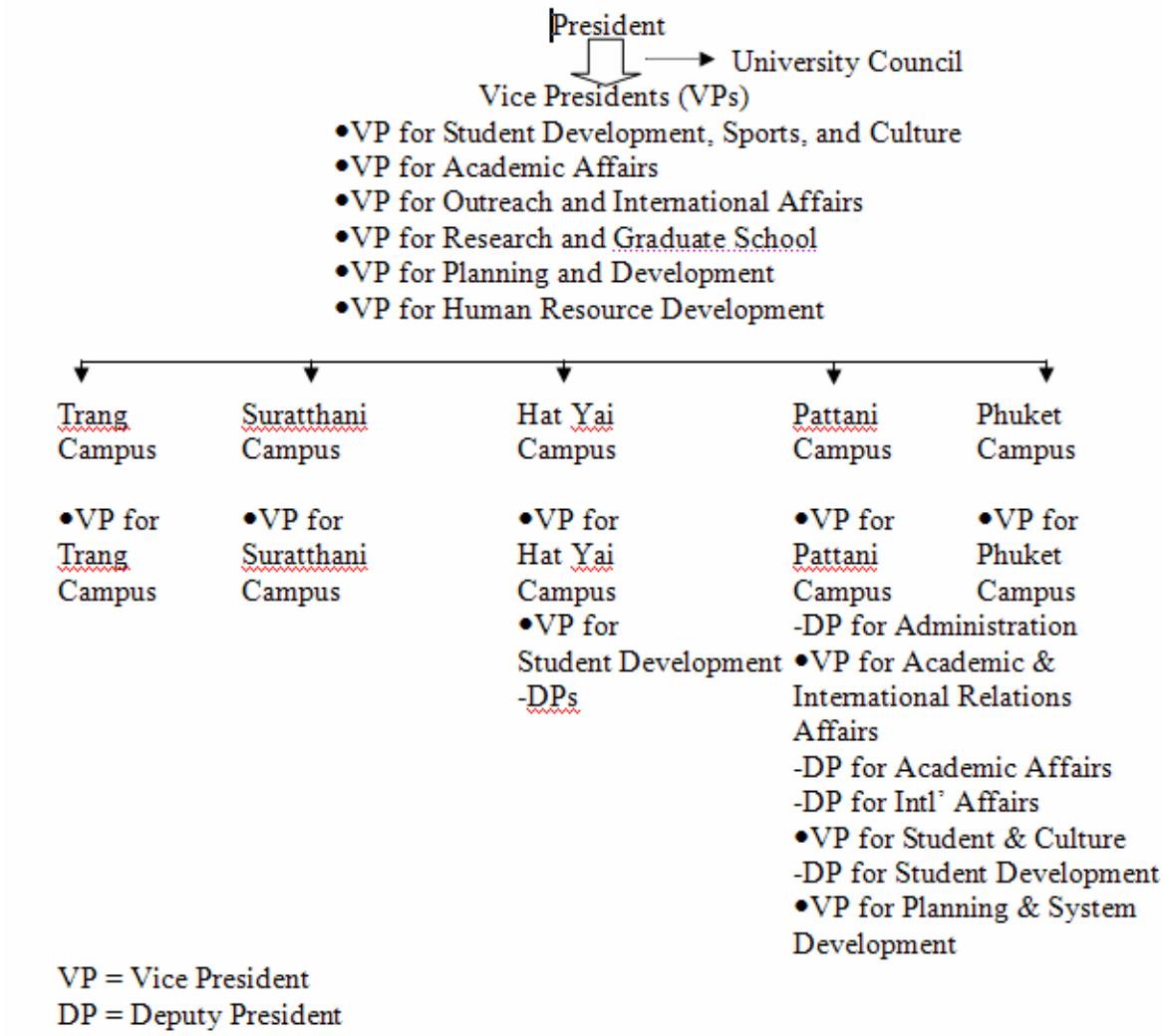

Figure 5. PSU Structural Administrative System.

A University uniform was mandatory in all PSU campuses including Pattani, especially when students attended class and met faculty members in the office. Male students wore white button-down shirts, either long or short sleeves, with dark-color pants. Females wore white short-sleeve blouses with PSU logo on it, black skirts and black shoes. Students wore this typical uniform to class, attended any university activities or event to contact department officials or faculty members in PSU.

The Faculty of Management Sciences

The Faculty of Management Sciences was established in 1976 as the seventh

faculty of PSU, and as the fifth faculty in Hatyai campus. There are two departments in the faculty, which are the department of Business Administration and the Department of Public Administration.

There are five majors in the Department of Business Administration: (a) Information Technology Management, (b) Human Resource Management, (c) Marketing, (d) Finance, and (e) Accounting. There are three majors in the Department of Public Administration: (a) Public Policy, (b) Rural Administration, and (c) Human Resource Management. Each department is administered independently and students in each major have their own characteristics.

The Playing Field

Prince of Songkla University, Hatyai campus is located on Karnjanawanit Road, Hatyai District, Songkla Province. There are many gateways, but for security reasons, there are normally only three entrance gateways that are open. The FMS's main facilities are comprised of four buildings: an Administrative Building, Conference Hall, Classroom Building 1, and Classroom Building 2. Figure 6 depicts a satellite view of FMS.

In the 2009, the faculty received a budget to build a new building, which will be completed in 2011. This new facility has already been named the Research and Knowledge Development for Management Building. Anyone who is interested in learning about the new building can communicate with the FMS administrative team communicated at the URL http://www.mgt.psu.ac.th/proj/. The information about the new building, including its objective, construction concept, and the plans for all eight floors can be accessed.

Figure 6. Faculty of Management Sciences layout.

The first floor of the Administrative Building is used for administrative work. There are rooms for the Dean, the associate deans, the secretary office of the Faculty, inventory unit, office of the department of Business Administration (BA), office of the department of Public Administration (PA), office of students' training, office of Accounting (continuing program), office of student affairs unit, office of educational service unit, and document unit. The second floor of the Administrative Building is used for instructors' offices, meeting rooms, the office of Security Market Information Center (SMIC), the office of the Doctor of Philosophy Program in Management, and the office of the International MBA (iMBA) program. The third floor is used for teaching and the office of individual computer lab, named as UsableLabs.

The first floor of Classroom Building 1 is like a patio. It is a wide area where the faculty normally place about seven tables where anyone can sit and work. The faculty

provides wireless internet access at this place. There is also an area called “the custom corner” where students can gather for activities and read. The Office of Institute for Small and Medium Enterprises Development (SMEs) is in Classroom Building 1. The rooms on the second floor of Classroom Building 1 include a computer project room for the fourth-year students majoring in business computing, a network control room for all staff in the Faculty, an office of a female computer staff, classrooms, and teachers’ offices. The third floor of a Classroom Building 1 is used primarily for an international program: Bachelor of Business Administration Program in Management. This English program has usually been called in short, BBA. The other programs are taught in Thai.

On the first floor of a Classroom Building 2, there are four classrooms; each room can be used for teaching about 120 students. On the second floor, there are six classrooms. Some rooms can be used for about 100 students, while the other rooms can be used for about 60 students. On the third floor there are 4 computer labs.

The administration of FMS consists of the Dean, an Associate Dean in Administration, an Associate Dean in Academic Affairs, an Associate Dean in Student Affair, and an Assistant Dean in Student Affairs. All administrators also have teaching responsibilities. The officers who started their work before the year 2003 were government officers. The officers who started their work after that were not government officers; they were only officers. There are 32 government officers and 13 officer instructors in the department of BA. Two government officers and three officers are pursuing doctoral degrees. There are 13 government officers and 4 officer instructors in PA; the Dean, an Associate Dean in Academic Affair, and the head of BA hold doctoral degrees. There are eight instructors in BA and four instructors in PA hold doctoral

degrees and the rest have master's degrees. There are 30 female and 15 male instructors in BA, while there are five female and 12 male instructors in PA. FMS offers education for a continuing program, bachelor degree, and master's degree. This study would concentrate on only students in ordinary majors of a bachelor's degree. In the academic year 2008, there are 2270 students in FMS, which is displayed in Table 5.

Table 5

Number of Students in the Faculty of Management Sciences by Gender and Year Entered

Major	2004			2005			2006			2007			2008			Total
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
BC	4	1	5	38	87	125	26	56	82							212
ITM										33	72	105	32	71	103	208
FIN	2		2	14	83	97	12	46	58	15	63	78	17	63	80	315
MKT	1	2	3	36	78	114	16	48	64	27	65	92	18	66	84	357
HRM	1	2	3	15	76	91	14	45	59	26	61	87	25	63	88	328
ACC		2	2	23	107	130	15	77	92							224
ACC										14	94	108	13	98	111	219
BPA (HRM)		1	1	13	23	36	26	41	67	14	41	55				159
BPA (PP)				7	5	12	15	13	28	14	17	31				71
BPA (RA)	2	1	3	13	17	30				8	15	23				56
BPA							8		8	2		2	48	63	111	121
Total	10	9	19	159	476	635	132	326	458	153	428	581	153	424	577	2270

BC: Business Computing
ITM: Information Technology Management
FIN: Finance
MKT: Marketing
HRM: Human Resource Management)
ACC: Accounting
BPA: Bachelor of Public Administration
PP: Public Policy
RA: Rural Administration

Note. From Prince of Songkla University, Registration Unit (2008). Retrieved October 16, 2008, from http://www.reg.psu.ac.th

The Player

Two groups of FMS participants, students and instructors, are identified in this study. The data sources were organized in two stages. In the first stage, all students and instructors of FMS who wanted to participate in this study became data source. In this stage, there were 133 students and 39 instructors, and these participants were surveyed. Information from students in the first stage is displayed in Table 6, while Information from instructors is displayed in Table 7.

Table 6

Number of Students in Survey Stage for Each Major

Major	Total
Accounting	26
Finance	27
Marketing	14
ITM	2
HRM…BA	51
Business Computing	10
HRM…PA	3
Total	133

Table 7

Number of Instructors in Survey Stage for Each Major

Major	Total
Accounting	6
Finance	4
Marketing	5
ITM	5

Marine merchant	2
HRM…BA	5
HRM…PA	6
Rural Administration	3
Public Policy	2
Economics	1
Total	39

Individuals in the second stage, 14 students and 9 instructors, were purposively chosen from the participants in the first stage to have about equal numbers of participants in four cultural contexts. In-depth interviews and observations were used in this stage. The students in this stage are identified as the following:

Student01 was a 21 year old, second year student in Information Technology Management.

Student02 was a second year student majoring in Marketing.

Student03 was a second year student majoring in Marketing.

Student04 was a second year student majoring in Human Resource Management.

Student05 was a first year student majoring in Human Resource Management.

Student06 was a first year student majoring in Human Resource Management.

Student07 was a first year student majoring in Human Resource Management.

Student08 was a first year student majoring in Human Resource Management.

Student09 was a second year student majoring in Finance.

Student10 was a first year student majoring in Human Resource Management.

Student11 was a second year student majoring in Marketing.

Student12 was a second year student majoring in Accounting.

Student13 was a second year student majoring in Accounting.

Student14 was a second year student majoring in Accounting.

Nine instructors were interviewed. Seven of them earned their master's degree from a university in Thailand. Two of them earned their doctoral degrees: one from Thailand and one from USA. There were four males and five females. One was in the age interval 26-30, one was 31-35, three were 46-50, two were 51-55, and two were 56-60. There was one finance, one economics, three accounting, two information technology management, and two human resource management majors from the Department of Public Administration. All except two instructors started their work as instructors at FMS. The instructors are identified as the following:

Instructor01 was an information technology management major. He started his career here as a teacher about 5 years ago.

Instructor02 has been teaching for many years at PSU.

Instructor03 has been teaching at PSU for about 11-15 years.

Instructor04 has taught at PSU for about 11-15 years. He got his Master's degree from a university in Thailand.

Instructor05 was a certified public accountant (CPA). She started her career as a teacher at FMS for about 6-10 years ago.

Instructor06 has taught at FMS for more than 25 years.

Instructor07 has taught at FMS for more than 25 years and is an accomplished researcher.

Instructor08 has taught at FMS for only about 6-10 years and earned a Master's degree from Prince of Songkla University, Hatyai, Thailand.

Instructor09 has taught at FMS for about 21-25 years. She got her doctoral degree from Washington State University, USA.

The Rules of the Game

While FMS has its own vision and mission, it is part of PSU. The vision of PSU is "to be one of the leading universities in Asia, with its commitment to research-based teaching, outreach and conversation of local arts and culture" (Prince of Songkla University, 2007, p. 6).

The missions of PSU are:

(1) To be knowledge-based university, based on its unique multicultural characteristics and the principle of sufficiency economy, with a view to making variety of information and cultural activities accessible to the populace from all walks of life.

(2) To promote an academic leadership based on issues related to the potentials of the southern Thailand, which will be subsequently linked to the global network.

(3) To link knowledge based on practical and international experience to teaching so that our students will be exposed to the real world as well as being well equipped with wisdom, ethics, international awareness and global competence (Prince of Songkla University, 2007, p. 6).

For FMS, in front of the faculty secretary's office, there were 2 signs that showed the vision and mission of the faculty. The vision of FMS is "to be a leading management school in teaching and research for private and public sectors both for national and international standards by 2012."

The mission of FMS states:

Striving for academic excellence on management education in theory and application for both private and public sectors:

(1) To provide qualified graduates;

(2) To initiate applied research and academic services for the community and society.

To support the faculty to be a leading management school, the curricula has been improved. The new curricula for undergraduate students started to be used in the academic year 2007. Some of the names of programs were also changed, as student01 said “Major, Information Technology Management, in the past was called Business Computer.” She realized the usefulness of computers, which is why she chose to study in the major of Information Technology Management. She said she likes studying computers, “because no matter what I do…any work…in the future, or in business, no matter what I do, I mostly use computer.”

The curriculum of Doctor of Philosophy Program in Management was set up in the last quarter of the year 2008. There was an “Open House” day on Thursday, December 18, 2008 at 9am to 11am. The objective of that day was to introduce the office, personnel, and the curriculum. They invited both the personnel of FMS and whoever was interested in the curriculum. They used many kinds of communication, including sending email, advertising in the FMS newsletter, and putting it on the website of the faculty.

Instructor01 said that he studied in this major “because I graduated in bachelor degree in Computer Science.” It was his preference to study in this major. He thought

that the content that he learned in bachelor's degree level was only basics, "I would like to learn more in detail."

Instructor08 said, "Indeed this major is an interesting major. It originated from the concept of computer applications, which is the way I like." He articulated that "I was interested in this major since the beginning, especially when it is used to apply in business, it increased my interest more. So I think that this major is really interesting major."

Student02 said that marketing "is the major that most fits me. I can mostly use it in a daily regular life."

Student03 told an interesting long story about why he chose to study marketing. After he finished studying in the secondary school, "the only thing I knew about PSU was that the faculty of management sciences is famous and this track is related to the track I learned, the art track." Moreover, he expressed loyalty for his homeland: "In my deep heart, I want to be in Hatyai more than Bangkok."

When student03 was asked to describe what the student in marketing major study about, he answered, "We study about demand of customers, so we can know how to serve their need."

Student11 told about her reason, "Because I like marketing and marketing is one part of many kinds of business."

Student04 expressed his reason, "Because I can use to apply in real life in human resource management, recruit personnel to work in the organization."

Student05 said that "Because I can practice human relationship and manage efficiently human resource."

Student06 answered in detail that “Because this major, human resource management, manage about personnel who will come to work with us and we must recruit people who have personality and property which appropriate with works that they will do.”

Student07 told her reason, “I am interested in business administration and in personnel management…in working.”

Student08 answer hesitatingly that “It is a subject that relates with business administration…my family want me to study in the faculty of management sciences.” But when the researcher asked to clarify why he chose this major, not the other major, he answered with more confidence, “Oh, yes, because this major should manage on both personnel and business.”

Instructor06 was in major finance too. She will be retired in the year 2011. She was a teacher here since the early year of the faculty foundation. She always explained everything in detail because “it is a spirit of teacher to explain clearly until students understand.” She gave her reason “It was fashion in that period of time that learning in finance will show potential of learner. So I learned [finance].”

Student12 answered why he studied in accounting “In the first time I was interested in accounting, and I considered trend in the future…work…I considered first that what I will want to do as my occupation in the future, and I also considered that I have competency to study or not. I studied information first a little bit.”

Student14 answered, “Because people who graduated from this major can do many varieties of jobs.” For the question that did she already planed what she will work after she graduate, she answered that “about accounting, in a company.”

Instructor02 commented:

> When I learn accounting, I found that I like it. I prefer accounting since I started my first subject in accounting, Financial Accounting. I was interested and eager to know, and I can make good score in that subject. I just found myself that I like these subjects because subjects in accounting are about collecting data systematically. There must be system that comes from good studying for a long time. There are accounting systems that collecting data correctly and completely.

Instructor03 was a CPA and taught subjects that relate to accounting. About his higher education, he answered:

> I made up my mind to change track. Subjects that I wanted to learn are about business administration. So I chose the most difficult of the business administration track, which is accounting. Once I graduated in accounting, I have freedom to do professional occupation.

Both instructor04 and instructor09 were in the major of human resource management of the department of Public Administration. Instructor04 answered that "First, I graduated from this major. They let we set ourselves into preferable group, I graduated in human resource management, so I am in human resource management major."

Instructor09 said that she taught her courses because "the department assigned me to teach, moreover, I learned about them. I learned about regional planning and about community management, both urban and rural community. Moreover, about constitutional law, I am interested in it and regularly follow it, so I have responsibility to teach these subjects."

What Students and Instructors Do Using Computers in General

All participant interviewed used computer in general for their work. Work for students means doing any work instructors assign. Work for instructors means doing anything related to their teaching. Only two instructors told about using a computer in their other duties or administrative responsibilities. Only one student told about her part time job using computer to earn some money with her team.

Indeed, communication and information searches were some parts of ordinary work, but the main duties at work included typing, printing, presentation, and calculation. Almost all the participants told about preparing assignments and presentation. The university provided a website for submitting grades at the URL https://grade.psu.ac.th, and all instructors must submit grades electronically using this web site including paper results passed through the department head. While all instructors should use computer for submitting grades, only Instructor02 and Instructor06 stated that they actually did it. The university provided virtual classroom version 2 (VCR2), but users preferred to call it VCR. Only two students and three instructors explicitly stated that they used VCR.

Work

All participants interviewed used computer in general for their work. Instructors used the computer for preparing their teaching, which included preparing PowerPoint slide presentations. Moreover, Instructor02 said, “I use Excel for keying in score and calculate students’ grade.” Instructor06 also said, “We use computer for submitting grades.” Instructor05 said, “Sometimes I use Excel for calculation about depreciation, interest something like this. I use Word and Excel. For teaching I use PowerPoint. The main things are these 3 programs that I usually use.”

They used computer for saving data such as reports, instructional materials, and exams. Instructor06 gave a reason why she typed exams by herself:

> In the past I asked typing officers to print them, I accepted in limitation that there were many subjects and my handwriting was so scrawled. Having them read my handwriting and I recheck whatever they typed… and sometimes they must type again. Sometimes I had to inform students about corrections of exams in the testing room. I had compassion with students that they should not be disturbed with this thing. So it is very useful that I type exams by myself.

Saving files in computer made them feel more comfortable to work. They realized in benefit of using computer. They could edit, delete, insert, or update texts without difficulty. Instructor09 noted, “We can save so many papers”.

All students used Microsoft Word for their assignments. Student01 said that “I almost used only ordinary Microsoft Office. But after I learned in information technology management, I used Microsoft Access…databases…Swish Max…create questionnaires.”

Student13 said, “I do works, print works, and play the Internet, search for general knowledge. I sometimes contact with friends, and I search information about…for working.”

Extra Work

Besides using computer in teaching, some instructors who had administrative team roles used computer for administrative work, too. Instructor08 said, “The second work I do using computer is in administration… in receiving and sending varieties of documents, or preparing varieties of information to help in making decision in administrative team”.

Communication

Both students and instructors used computer for communication. They used both e-mail and web board. Instructor01 said, “Some students may not feel comfortable to talk with me in class. They can contact me via web board”. He said, “I told students the deadline for submitting their works. Student can see the exercises and the set dead line for each exercise”.

Instructor03 expressed his preferences, “I use it for checking e-mail and communication with friends instead of using telephone through MSN”. Instructor07 said that she “communicated to make appointment for additional class or calculation class, talk with students”.

Instructors used also the computer for assigning students assignments via VCR2. Instructor09 gave her opinion about virtual classroom that “we could post teaching materials in computer and students came in to copy files something like that to use them and they could learn backward”. From the first semester of the year 2008, there was no more VCR2. But there was LMS@PSU instead. It was an MOODLE open source course management system that PSU adopted to use in the university.

Students also communicate electronically with instructors, friends and relatives. Student06 said that “I enter to look at web, read web, search more knowledge, and sometimes talk with friends”.

Search Information

Using computer for communication and searching information came along together. They searched for tools, equipment, materials other than textbooks. Instructor04 said that “I search the Internet, e-mail, e-mail [he stressed what he preferred to use most],

searching information and prepare [PowerPoint presentation] slides, prepare documents for teachings, documents, and texts". Instructor08 said that "in this time using computer is connected with data communication, network, the Internet. Using computer can help us know sources of information easily". Instructor09 supported it ~~that~~ "sometimes the books that we read are OK but we want to know that at present, what will be trend in the future in the topics that we are teaching…what are new things happened"

Student03 whose experience with the computer started since he was in kindergarten using Paint program for editing pictures said that "When I studied at the sixth year of primary school, my father bought computer for me. I used it almost for playing game, no any other work". Time flew, his computer practices changed. He said ~~that~~ "about in the last period of secondary school, I started to learn how to use the Internet for searching information. I almost used Word. If there were assignments in VCR, I entered VCR to see assignments. I almost searched information more than played game".

Entertainment

They expressed their thought that there were many interesting sources that did not relate to their ordinary work, teaching or learning. Instructor08 informed that "I use computer for recreation…entertainment…see movies…listen songs…or as a source for novel something like that".

Student02 used computer for his pleasure. He said that "sometimes I want to know about stock. I play SetTrade… Click2Win too".

Student07 described his experience, "umm…do reports, and … do reports for presentation, and play games, and check mail, something like that".

Student08 was the first student who told about playing games in the first inquiry. He said “I use it for searching information and doing works, doing reports, or maybe sometimes playing games for relaxation”.

Student09 also said, “I usually use for e-mail and for entertainment and games”.

Student10 was the third student who told about playing games in the first inquiry. All three students who told about playing games in the first inquiry were males. While student07, who did not talk about playing games in the first inquiry, told the researcher that she played games after having conversation for a while, was a female. Student10 said that he “search for works and play the Internet, talk with friends, play game, and listen to songs”.

Point of View about CAI: What It Is

Instructors viewed CAI as a tool that helps the instructor in teaching, giving lectures and making them more interesting. Instructors assigned students to search information for given topics Students submitted their works using computer and then instructors evaluated their works. It helped instructors to prepare for teaching, including giving students assignments and information in advance. If students had questions in contents or scores, they could communicate with instructors via e-mail, VCR, or web pages.

Students viewed CAI like exercises or tests. They learned with computer and took exams by using information that they learned with computer. Using CAI was easy, just only clicking, or doing tiny duty like student01 said that “students just enter the password. They can use any available computer, just enter password”. CAI helped students learn many things and understood more. Students could do self study. Instructors

may record what they had taught in computer files and upload them to the Internet ~~which~~ where students could retrieve those files. Moreover, computer use helped the instructors to draw more students' attention.

The Game

In this study, the game in FMS was students' and instructors' preferences in CAI, concentrated in modes of CAI.

Modes of CAI that Instructor Liked Most

Most of instructors (3 of 9) liked CAI most in simulation. Most of instructors (3 of 9) liked CAI most in tutorial. One instructor decided not to declare which mode of CAI she liked most (see Table 8).

Table 8

Modes of CAI Instructors Liked Most

Like Most	Grand Total
drill and practice	1
instructional game	1
N/A	1
simulation	3
tutorial	3
Grand Total	9

Modes of CAI that Instructors Liked Least

One instructor decided not to declare which mode of CAI he liked least. He liked CAI most in tutorial. Most of them liked CAI least in demonstration, instructional game, and testing (see Table 9).

Table 9

Modes of CAI Instructors Liked Least

Like Least	Grand Total
Demonstration	2
Instructional game	2
N/A	1
Simulation	1
Testing	2
Tutorial	1
Grand Total	9

Modes of CAI that Students Liked Most

Half of the students (7 of 14) like CAI most in drill and practice (see Table 10).

Table 10

Modes of CAI Students Liked Most

Like Most	Grand Total
Drill and practice	7
Instructional game	2
Simulation	3
Tutorial	2
Grand Total	14

Modes of CAI that Students Liked Least

The first three modes of CAI that students liked least are tutorial, simulation, and demonstration respectively. More than four tenth of students (6 of 14) liked CAI least in tutorial (see Table 11).

Table 11

Modes of CAI Students Liked Least

Like Least	Grand Total
Demonstration	2
Problem solving	1
Simulation	3
Testing	2
Tutorial	6
Grand Total	14

The Calendar

FMS has a semester schedule. Indeed there are two academic calendars: ordinary calendar for all programs except BBA program, and calendar for BBA program. Both calendars have a semester schedule. For BBA, the first semester is from August to middle of December and the second semester is from January to middle of May. For an ordinary program, the first semester is from June to September and the second semester is from November to February. There are 16 weeks for each semester. The Midterm exam is on the eighth week and the final exam is after the sixteenth week.

Summary

This chapter presented the descriptions of FMS, which emphasizes the workplace contexts, FMS participation, CAI practices, and CAI preferences. All participants used computers in doing work. Instructors' work included teaching materials and students' exercises. Students' work included instructors' assignments. Only nine of the twenty-three participants used the computer for entertainment. Editing files with a computer is easier than with paper. The participants could insert, delete, or update texts easily. Instructors viewed CAI as a tool, while students viewed it like exercises or tests. Modes

of CAI that instructor liked most were simulation and tutorial. Students liked drill and practice most, the latter was simulation. The mode of CAI that students liked least was tutorial. In the following chapter, the perceptions of students and instructors will be viewed through the lens of Douglas's (1982) grid and group typology.

CHAPTER V

DATA ANALYSIS

The purpose of the study was to use Douglas's typology to explain the educational culture of the Faculty of Management Sciences (FMS) at PSU, to describe the students' and instructors' preferences about CAI in FMS, and to describe CAI practices in FMS.

In an effort to get a holistic picture of students' and instructors' practices and preferences in CAI, a case study research strategy was utilized. The study was limited to one setting; however, it provided adequate information to accurately assess the culture. The words of students and instructors portrayed their practices and preferences in CAI and assisted in understanding the goals, roles, responsibilities, and requirements of students and instructors of FMS.

The previous chapter provided the descriptions of students' and instructors' practices in CAI, which was developed from the survey, interviews, observations, and relevant documents. The questionnaires used for surveys, Thai versions of grid and group cultural preference tool for students (Appendix D) and for instructors (Appendix F), were utilized as a preliminary data source to assist in determining the grid and group typology of both groups. The questionnaire was adapted from the survey instrument constructed by Harris (2005).

According to Douglas's terminology, the overall structure of PSU can be categorized as a strong-grid and low-group (Bureaucratic) environment. The high-grid environment is clearly seen from the university administration system. There are five campuses of PSU where the president's office is in the main campus. Other four campuses are administered by vice presidents appointed by the president. The vice presidents share some authority to handle certain affairs but a report should appear on the president's desk. In many cases the president makes the final decision. The administration of the president however is under the guide and supervision of the university council.

The whole administration in the organization is guided by the PSU Act which explicitly states the authority of each position and boundary of the administration. It is obvious that there are multiple layers of administration ranking from the section office, department, faculty, campus, and university levels. This is a hierarchical administration system. The formal communication is only through written and official letters. For example, it takes several days or even weeks for a piece of letter from one faculty member to arrive to the president's desk.

PSU administration system, ranking from the top to departments, has a clear chain of command and rules. Job titles and descriptions are highly important. Faculty members are considered as final experts in instruction. A top-down communication flow with formal written and explicit letters is mainly practiced. Achievement of students is only measured by time and final outcomes. All are bounded with Thai hierarchical culture. Figure 7 illustrated the grid and group typology categorizing the working culture of PSU.

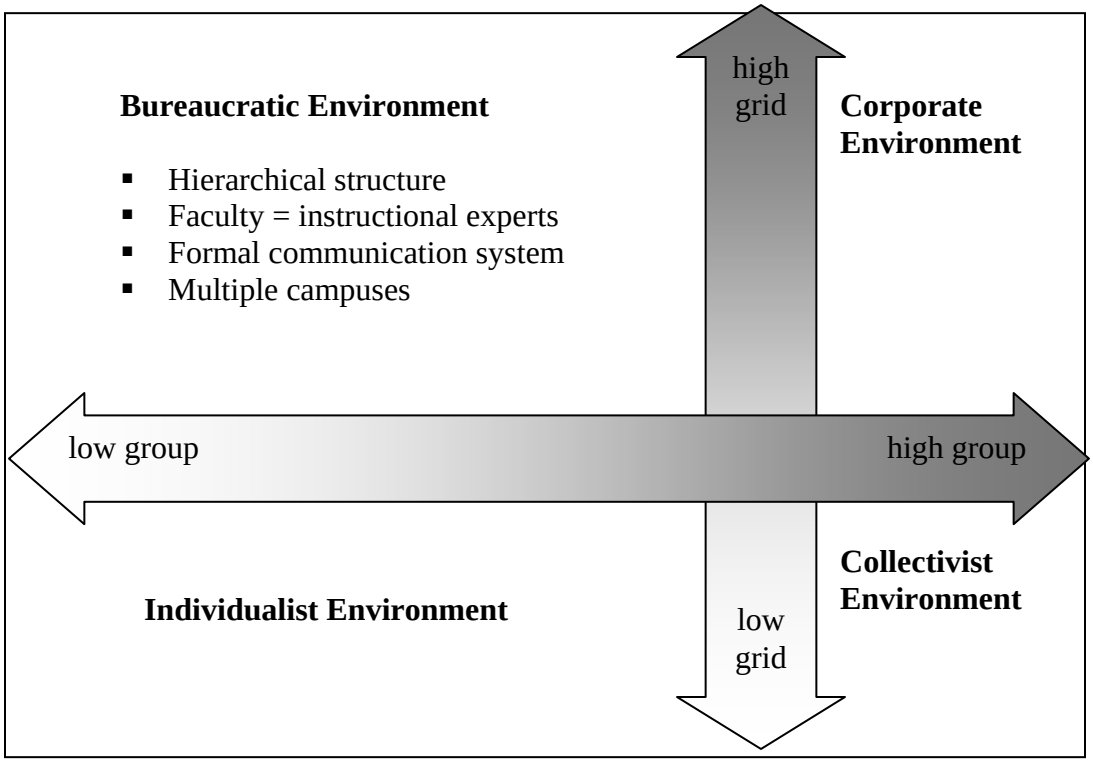

Figure 7. PSU grid and group typology.

In this study to assure the results about cultural contexts, the researcher used two methods. In the first method, the researcher followed Harris's (2005) "scoring procedures" (p. 72) and "plotting procedures" (p. 76). The researcher used the mean of each grid item as a grid score for each participant, and used the mean of each group item as a group score of each participant, then plotted the clustered points. After conducting this analysis, the cultural context quadrants could be easily determined.

The second method emerged after reading about each item of each assessment tool in Harris (2005):

For each item, there is a continuum of one to eight (1-8). The number one (1) signifies the weakest level of analysis, or extreme "low," and the number eight (8)

represents the strongest level, or extreme “high.” The intermediate numbers (2-6) provide a continuous scale between these extremes.(p. 72)

To differentiate clearly between low grid response items and high grid response items and to obviously discriminate between low group response items and high group response items, the researcher modified the scores on both grid and group continuums: (a) score 1, 2 and 3 were considered as *Low* (b) score 4 was considered as *Mid Low* (c) score 5 was considered as *Mid High* (d) score 6, 7 and 8 were considered as *High*.

The Information from the first method showed that FMS students’ preferred cultural context was Collectivist (low grid and high group). FMS instructors’ preference cultural context was also Collectivist (low grid and high group).

The Information from the second method for students was grid items frequently indicating low grid, and group items frequently indicating high group from the survey results. The researcher concentrated only on low grid and high group because the results from the first method showed that FMS students’ prefered cultural context was Collectivist (low grid and high group).

The Information from the second method for instructors was grid items frequently indicating low grid, and group items frequently indicating high group from the survey result. The researcher concentrated only on low grid and high group because the results from the first method showed that FMS instructors’ preference cultural context was Collectivist (low grid and high group).

The researcher counted the frequency of the low scores (score 1, 2 and 3) for grid and high score (score 6, 7 and 8) for group from students’ data. The researcher calculated percentage. Only the items with percentage greater than 50 were considered. After sorting

them by descending order, the researcher knew which items frequently indicated low grid and high group for students.

The researcher counted the frequency of the low scores (score 1, 2 and 3) for grid and high score (score 6, 7 and 8) for group from instructors' data. The researcher calculated percentage. Only the items with percentage greater than 50 were considered. After sorting them by descending order, the researcher knew which items frequently indicated low grid and high group for instructors.

The presentation of analysis was divided into the following:

1. FMS students, which included:
    (1) FMS students' survey results
    (2) FMS students' work environment (Playing Field and Players)
    (3) FMS students' practices and preferences in CAI (Rule of the Game and the Game)
    (4) FMS students' time (Calendar)
    (5) Grid and Group summary of FMS students
2. FMS instructors, which included:
    (1) FMS instructors' survey results
    (2) FMS instructors' work environment (Playing Field and Players)
    (3) FMS instructors' practices and preferences in CAI (Rule of the Game and the Game)
    (4) FMS instructors' time (Calendar)
    (5) Grid and Group summary of FMS instructors

The survey results would be primarily discussed for FMS students and instructors to have clear picture about their grid and group category. The following presentation will be on the schools' culture, in Lingenfelter's (1996) format, focusing on the social context which included:

(1) The playing field (FMS physical resources)

(2) The players (FMS students and instructors participated in the case)

(3) The rules of the game (relationships between and among players in the playing field)

(4) The game (FMS students and instructors practices and preferences in CAI)

FMS Students

FMS Students' Survey Results

A total of 133 out of 2270 (5.86%) FMS students answered the survey. From the clustered points, there were 92, 28, 11, and 2 students in the collectivist, corporate, individualist, and bureaucratic quadrants respectively, which were 69.17%, 21.05%, 8.27%, and 1.50% respectively (see Figure 8).

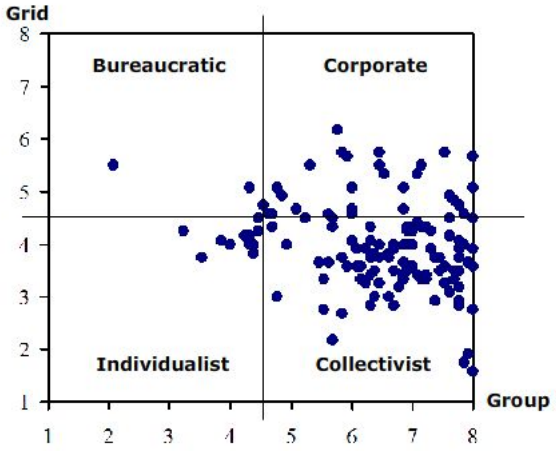

Figure 8. Clustered points of FMS students.

Grid continuum. Most of the students' responses were in the low grid category (score 1, 2 or 3). The following table showed only the percent greater than 50% of students who answered in low grid category and the corresponding number of grid item (see Table 12).

Table 12

Grid Item Number and Percent of Students in Low Grid Category

Grid Item #	Percent
4	69.9
5	67.7
6	66.2
3	52.6
9	52.6
10	51.9

The questions frequently indicating low grid included the following items:

Item # 4 - I prefer a work atmosphere where individual teachers have:

full autonomy in generating their educational goals.

Item # 5 - I prefer a work atmosphere where individual teachers have:

full autonomy in choosing instructional methods/strategies.

Item # 6 - I prefer a teaching and learning atmosphere where students are:

encouraged to participate/take ownership of their education.

Item # 3 - I prefer a work atmosphere where teachers have:

full autonomy in textbook selection.

Group continuum. Most of the students' responses were in the high group category (score 6, 7 or 8). The following table showed only the percent ~~that~~ greater than

50% of students that answered in high group category and the corresponding number of group item (see Table 13).

Table 13

Group Item Number and Percent of Students in High Group Category

Group Item #	Percent
10	88.7
11	87.2
1	82.7
3	79.7
7	75.9
2	74.4
9	74.4
12	74.4
6	67.7
13	67.7
4	65.4
8	64.7
5	63.9

The questions frequently indicating high group included:

Item # 10 - I prefer a work atmosphere where educators and students have:

much allegiance / loyalty to the school.

Item # 11 - I prefer a work atmosphere where responsibilities of teachers and administrators are:

clear / communal with much accountability.

Item # 1 - I prefer a work atmosphere where instructional activities are initiated / planned by:

all educators working collaboratively.

Item # 3 - I prefer a work atmosphere where intrinsic rewards primarily benefit:

everyone at the school site.

Item # 7 - I prefer a work atmosphere where curricular goals are generated: collaboratively

Item # 2 - I prefer a work atmosphere where socialization and work are: incorporated / united activities.

FMS Students' Work Environment (Playing Field and Players)

Grid considerations. There were few formal specialized roles and regulations. Students were encouraged to take ownership in their own education. For example, student06 mentioned ~~about~~ his work that he did in a group with his friends for human and social course when they used a program for editing video. He said, "My friends had responsibilities in doing it". He told details of his work, "Some parts of contents came from books, the other parts came from collecting data by ourselves, from the real place, the real event, for example event about game shops, we went to take photographs of game shops. We assigned work [in our group] that who will do which part". There were about six to seven students in each group. These sentences supported an argument that FMS students' cultural context was low-grid and high-group.

Group considerations. Individual behavior was subject to control exercised in the name of the group. For example student03 expressed a high group characteristic when he told the reason why he studied in marketing major "in that time I think that I would not come to take exam here because I would like to take exam at ABAC. But my friends applied to take exam here so I tried the exam too. The only thing I knew was for PSU, the faculty of management sciences is famous and this track is related to the track I learned, the art track." Finally, he studied at FMS because "in my deep heart, I want to be in

Hatyai more than Bangkok." Hatyai was his hometown. He added more reason why in the first time he wanted to take exam at ABAC in Bangkok because he wanted to practice English even though "I wanted to be in Hatyai more than Bangkok." His story should represent high group. Perpetuation of corporate goals and group survival was also important.

FMS environment was a good example of a high-group social system that organized and managed all resources for the benefit of students. Student01 compared using computer at the faculty to the ones at the computer center "using computer at the faculty is more convenient."

Harris (2005) stated, "Strong-group environments are typically replete with prominent signs that display member allegiance" (p. 38). FMS had a motto. It was "management science is a pride." There was a sign in the vinyl hung on a pathway to a classroom building 1 inviting students to dress in FMS uniform. There was a sign made from wood that anyone who came to FMS administrative building from the west side will see from the first step he or she came in. Content in that sign was the same as in the vinyl. This motto appeared in the website of FMS student affairs unit too. These sentences supported the evidence that FMS students' cultural context was high-group.

FMS Students' Practices and Preferences in CAI (Rules of the Game and the Game)

Grid considerations. The game, as described in this study, was students' and instructors' practices and preferences in CAI. Harris (2005) stated, "At the low, or weak, end of the grid continuum, teachers experience much more independence and employ considerable freedom in choosing curriculum, texts, and methods" (p. 35). Student01 expressed the "freedom" of studying in law course. The instructor gave URLs that

students could visit to study but it depended on students themselves whether they would go to visit that web site. Student01 admired this instructor. She preferred his teaching when students were motivated more by self-defined interests:

> It looked like students read book and answer question concurrently… at least students already scanned contents. He taught like… he did not talk out off the contents so much… even though he might talk out off track but still in the main contents… he gave examples about laws that relate with whatever really happened in social… current issues… argument cases…politics…he had ability to give examples that relate with laws so students could understand more.

Harris (2005) noted that educational spaces "can take multiple forms, including the home and community, classrooms, laboratories, sports fields, gyms, auditoriums, cafeterias, band halls, and playgrounds, as well as the virtual environment of cyberspace" (p. 67). FMS provided variety of educational spaces for students. They could use computer labs from 8:00 am to 10:30 pm if no instructors used them for teaching. There were four computer labs the students could use. The Students who have their own computers could connect to the internet using PSU wireless network on the first floor of classroom building 1 and the first floor of classroom building 2. This "freedom" of studying environment gave the clear evidence for low grid cultural context.

In low-grid environment, people were motivated to join in activities by self-defined interest (Harris, 2005). Instructor09 answered the question about her students to posting on the web board as follows:

> I did not force them but I encouraged them to do. I told them that this was a way of communication. Sometimes we read or are interested in any issue, especially in

> public administration; different people can think in different ways in the same issue…politics…policy…or region development tendency. I told them that they must respect in the other's opinion and they must listen to the other's idea. Indeed it is good in this part that they can listen to the other's idea. Democracy means everyone has freedom in speaking, in thinking…but this is the principle, everyone is equal. But in practical, how can we do that because in Thai culture there is structure…patronizing system…seniority and youth…it is overlapped…if students remove this thing away they can have more freedom in thinking and expressing their ideas.

These combined activities provide good evidence for a low-grid, high-group environment for FMS students.

Group considerations. A high group context was strongly represented in students' practices and preferences in CAI. Students06 told about his presentations in "Science… that I must present. And sociology…These two subjects are almost subjects that I must present works. For another subjects, I must do reports as volumes…anything that are fixed and have no enough time to present in the class, for example, economics can not be presented in front of the class, because there are many students enrolled in the same section". He always presented as group work. There were about 80 to 150 students enrolled in that class. So there were about 10 to 15 groups.

In strong-group environment, the school calendar had much influence over activities. In the first week of each semester, students did not spend their time much in computer labs. But in about four weeks before the final exam, they spent more time in computer labs because they had many assignments from the courses to submit. There

were more students working both in groups and individually until the close time of the labs, which evidenced a strong group environment.

FMS Students' Time (Calendar)

Grid considerations. FMS academic calendar is fixed with PSU calendar. There are two ordinary semesters. The first semester is around June to September. The second semester is around November to February. Each year the PSU registration unit was responsible to announce the exact start and end date of each semester.

Learning does not mean that the students should only sit and listen whatever knowledge instructors conveyed in classes. Having some time to join the university activities is part of learning in the university too. So, PSU specified that all PSU undergraduate students must have at least 60 hours attending PSU activities all four years of their study. However, they can attend any activity, any time they prefer. Students can start searching for PSU activities and recording their activities at http://student.psu.ac.th/ts2 or they may prefer starting from website which provides news from PSU student affair unit. Its URL is http://student.psu.ac.th/news/

FMS students are PSU students. So they have responsibility to attend at least 60 hours of PSU activities as any other students. They also have freedom to attend any activity at any time ~~that~~ they prefer. What they really practiced in the past was they tried to complete this responsibility in the first two years of their studies. They planned to study hard in the last two years. They planned to have training or internship at the end of the third year. They planned to be job seekers at the end of the fourth year. Considering ~~from~~ their freedom to attend any activity at any time they prefer, this is evidence of low grid environment.

Group considerations. FMS provides many activities appropriate to students' status every year. For the first-year student, there is orientation. This activity is managed by the student affairs unit. The Dean and all available staff, including all available instructors join this activity. Students are important "actors" in this activity. The Dean gives some advice. Finally, there is a sacred parade performed by representative students. Most of the representative students work in committees in FMS student association. The smiling leading student holds the sign made from wood with the name of FMS in Thai. The following student holds the FMS flag. Two students hold a frame with a picture of Prince of Songkla. Four students carry a wood-frame. There are eight students in the last group. Each of them holds the FMS flag. They play a PSU song and FMS song along the parade too. This activity strengthens students' allegiance to the university and the faculty. Some part of the song stated, "To join the same blood, Songkla Nagarind." Some part avowed clearly about their faithfulness, "We will have loyalty. We will cooperate to do good things."

One of activities for the first-year students is teacher adoration day. It is another sacred ceremony. Students decorated their pair of trays. Male students hold candles and joss sticks trays. Female students hold flower trays. They create and decorate a new style, new design every year. This activity gives students opportunity to display their respect to their teacher. Students from FMS Thai music club have an opportunity to show their potential in this day. They play Thai musical instruments while each group of students gives their decorated trays to teachers. Each group of students almost comes from each major or each program.

In the beginning of the teacher adoration day ceremony, all committees of old FMS student association will be given certificate for their work. There is an election for FMS student associations every year. Any group who wants to be the winner in the election must work well in group enough to win. After the ceremony, there will be announcements which pair of trays get the first, second and third prize. There are ~~the~~ other kinds of prizes too. Any group who wants to be the winner in competition must work well in group enough to win. These activities support the evidence that FMS is in high-group environment.

Grid and Group Summary of FMS Students

In summation, FMS students' practices and preferences in CAI were:

(1) A low grid/high group work environment (collectivist)

(2) Individual student's identification was derived from group membership

(3) There were few formal specialized roles and regulations

(4) An inclusive, team approach to assignments

(5) Working cooperatively for group was important

The categorizing of FMS students in Douglas's grid and group typology was presented in Figure 9.

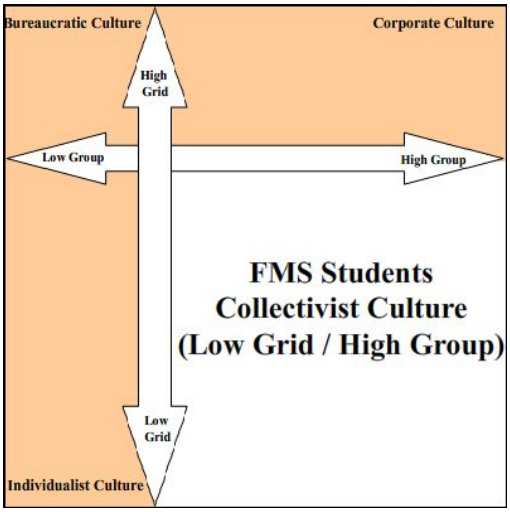

Figure 9. FMS students' grid and group typology.

FMS Instructors

FMS Instructors' Survey Results

A total of 39 out of 62 (62.90%) FMS instructors answered the survey. From the clustered points, there were twenty six, ten, three, and zero instructors in collectivist, individualist, corporate, and bureaucratic quadrant respectively, which were 66.67%, 25.64%, 7.69%, and 0.00% respectively (see Figure 10). It should be noted that while some instructors and students were individualist, the significant cultural bias of students and instructors was collectivist.

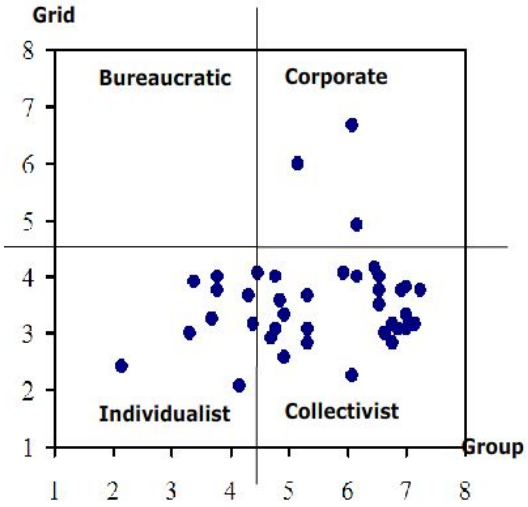

Figure 10. Clustered points of FMS instructors.

Grid continuum. Most of instructors' responses were in low grid category (score 1, 2 or 3). The following table showed only the percent greater than 50% of the instructors who answered in low grid category and the corresponding number of grid item (see Table 14).

Table 14

Grid Item Number and Percent of Instructors in Low Grid Category

Grid Item #	Percent
5	94.9
4	92.3
3	84.6
6	84.6
9	69.2
10	69.2
1	61.5

The questions frequently indicating low grid included:

Item # 5 - I prefer a work atmosphere where individual teachers have:

full autonomy in choosing instructional methods/strategies.

Item # 4 - I prefer a work atmosphere where individual teachers have:

full autonomy in generating their educational goals.

Item # 3 - I prefer a work atmosphere where teachers have:

full autonomy in textbook selection.

Item # 6 - I prefer a teaching and learning atmosphere where students are:

encouraged to participate/take ownership of their education.

Group continuum. Most of the instructors' responses were in the high-group category (score 6, 7 or 8). The following table showed only the percent greater than 50% of instructors that answered in high group category and the corresponding number of group item (see Table 15).

Table 15

Group Item Number and Percent of Instructors in High Group Category

Group Item #	Percent
11	84.6
10	76.9
2	66.7
7	61.5
1	56.7
3	56.4
6	56.4
9	53.8
8	51.3
12	51.3

The questions frequently indicating high group included the following items:

Item # 11 - I prefer a work atmosphere where responsibilities of teachers and administrators are:

clear / communal with much accountability.

Item # 10 - I prefer a work atmosphere where educators and students have:

much allegiance / loyalty to the school.

Item # 2 - I prefer a work atmosphere where socialization and work are:

incorporated / united activities. .

Item # 7 - I prefer a work atmosphere where curricular goals are generated:

collaboratively

Item # 1 - I prefer a work atmosphere where instructional activities are initiated / planned by:

all educators working collaboratively.

Item # 3 - I prefer a work atmosphere where intrinsic rewards primarily benefit:

everyone at the school site.

FMS instructors' Work Environment (Playing Field and Players)

Grid considerations. Many of the instructors had the freedom to establish their own work goals and activities. For example, instructor04 told the reason why he changed his slides ~~that~~ he used in the past:

> One…the contents were changed. One…about teaching, I started from knowing nothing to teach…molding from nothing, thinking that what contents I should set them in this subject. I gradually modify what I do in the first round. It did not mean that whenever you accept to teach any subject you will already had all information needed immediately. After the first round, I already taught that subject till the end of the semester, I found that there still were some drawbacks. I could not find slides…or I could not find contents in time. Then I thought that next time I must improve some parts. So I must teach at least three times before I

had a clear picture that what contents of each subject will looks like. Having taught three rounds…three years, I must spend time for ordering and improving contents and slides. After teaching for three years, some teacher was absent, some teacher was transferred, [there was no one to teach in some subject, so] I must throw away the old subject I taught to teach the new subject. The subjects that I teach are not fixed. For example, Arjarn Ray go to study, I must start my first step with organization theory. I had to imagine that what I will teach. Start from only three lines of course description. I had to elaborate it to be solid contents. As I told you, I prepare in the morning to teach at noon…prepare in the morning to teach at noon.

Group considerations. Individual behavior was subject to controls exercised in the name of the group. Instructor04 had the freedom to establish his own work goals and activities (low grid), but he still maintained a communal mindset (high group). He showed his flexibility when he told about the new subject which he was assigned to teach:

I used to teach evaluation. They said that 'you are a new teacher, so you teach this subject'. [Indeed he taught for about 11 to 15 years, but he just returned from leaving to study in Doctoral degree]. So I taught new subject. Indeed I…I taught old subjects repeatedly. So I thought that teaching new subject was good as well. But [drawback was that] I had to start the first step [for new subject] again.

FMS Instructors' Practices and Preferences in CAI (Rules of the Game and the Game)

Grid considerations. The game, as described in this study, was the students' and instructors' practices and preferences in CAI. In low-grid environments, teachers have

full autonomy in textbook selection. Instructor07 told about the book and teaching material which she used for master's degree students. She bought a package from a publisher which provided the convenience tools. She said "there are CDs of PowerPoint. We need not to prepare them. They are beautiful. Exercises also provided".

There was another evidence of low-grid environment. In low grid environments, people are motivated to join in activities by self-defined interest (Harris, 2005). FMS instructors could attend any training the faculty provided for them based on their interests.

Group consideration. In high-group environment, instructors and students have much allegiance / loyalty to the school. Instructor06 expressed her gratitude in trainings set by the faculty. She took many benefit attending that training, "I joined that training and knew how to use e-mail and how useful it was". She articulated her impression, "I created PowerPoint even though I had no basic in typing". She has much loyalty to FMS. She worked at FMS for a long time and will get retired in a couple of year. But she still keeps on updating her teaching material. She enjoys having training, if FMS will provide. "I like it. If I have time, I will not miss any training."

FMS Instructors' Time (Calendar)

Grid considerations. There is a general rule that each instructor must sign a paper every working day. FMS officer append paper in a signature file each day. However, instructors prefer to wait for a while (every week, every month, or every semester for some instructors) and sign them in the same time. As long as they do their job well, the FMS administrative team does not want this little thing to obstruct core accountability. This is evidence that FMS is low-grid environment.

Group considerations. In the same time that students work in group, instructors work in group too. They join in FMS orientation for the first-year students. They join in a teacher adoration day for the first-year students. They join in meetings for training or internship of the third-year students. They join a job seeker day for the fourth-year students. They keep traditions, for example, Songkran festival. Songkran is a Thai traditional New Year. It starts on April 13 every year and lasts for 3 days. It is also known as the water festival because people believe that water will wash away bad luck. So, the younger people will express their respect to the older people by pouring scented water onto the hands of the older people. The older person will bless the younger people to have good luck and prosperity. Ordinary Songkran festival is on April 13. It is a holiday. People always go back to their home towns to express their respect to their parents. So, FMS set Songkran festival for FMS people on the working day before April 13. Even though just only the available instructors join each activity, not all instructors, this is evidence that FMS is high-group environment.

Grid and Group Summary of FMS Instructors

In summation, FMS instructors' practices and preferences in CAI were:

(1) A low grid/high group work environment (Collectivist)

(2) Individual instructor's identification was derived from group membership

(3) There were few formal specialized roles and regulations

(4) An inclusive, team approach to assignments

(5) Working cooperatively for group was important

The categorizing of FMS instructors in Douglas's grid and group typology is presented in Figure 11.

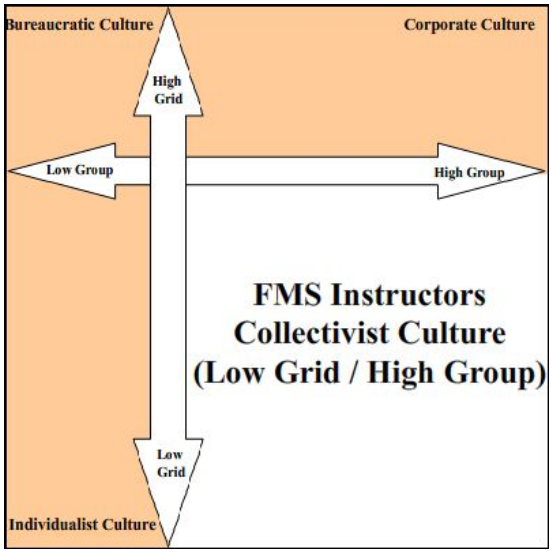

Figure 11. FMS instructors' grid and group typology.

Based on interview, observation, and document analysis, FMS as a whole appeared to be in collectivist (low-grid, high-group) school social environment. Moreover, their practices in CAI most closely looked a lot like collectivist environment too. Therefore, there was a match between the school social environment and its practices in CAI. FMS administrative team gradually developed the faculty. Because there was a match between the school social environment and its practices in CAI, it should be implied that they took the right track for CAI development in FMS. Figure 12 illustrated FMS grid and group typology for school social environment. Figure 13 illustrated FMS grid and group typology for CAI practices.

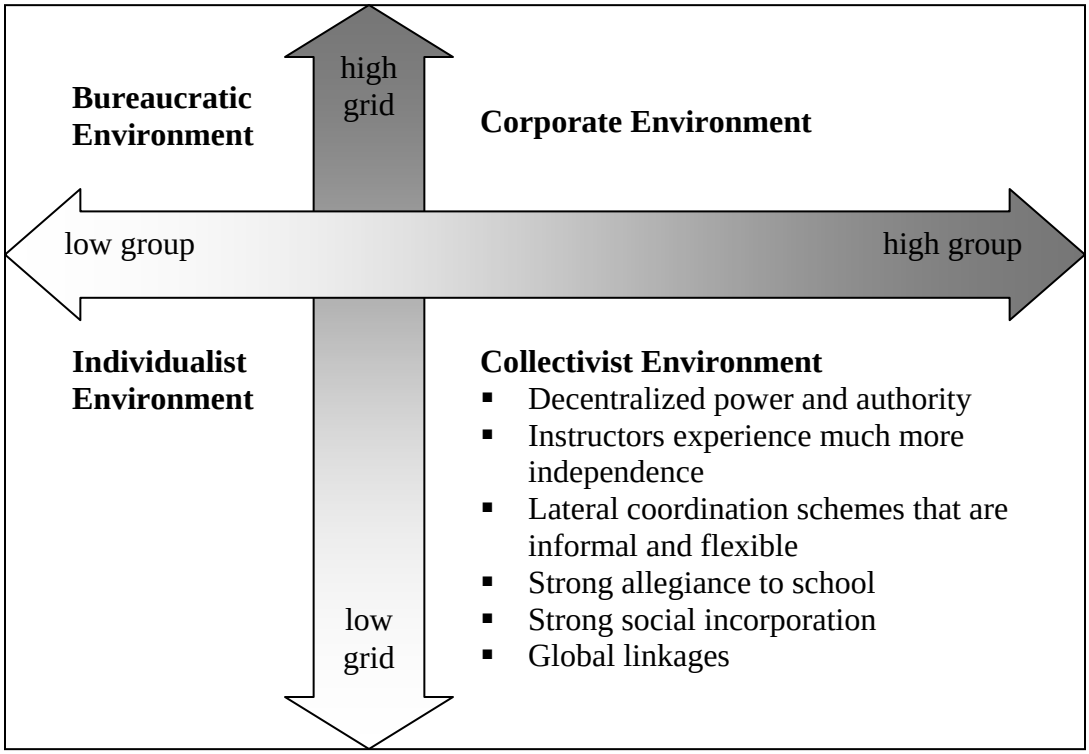

Figure 12. FMS grid and group typology for school social environment.

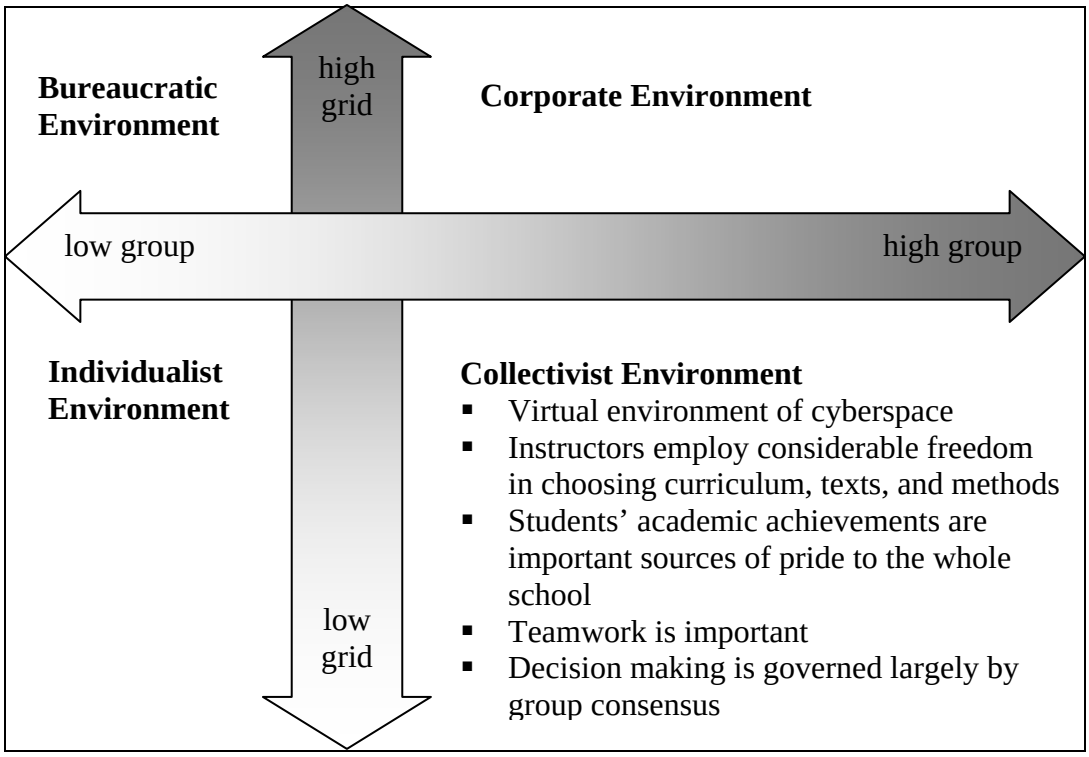

Figure 13. FMS grid and group typology for CAI practices.

Comparison and Contrast of FMS Students and Instructors

This study looked at the organizational cultures and practices and preferences in CAI of FMS students and FMS instructors. Based on the data, both FMS students and FMS instructors were categorized as collectivist culture according to Douglas' (1982) grid and group typology. They were in the low-grid/high-group quadrant. The obvious similarities were in their overall cultural context. Their differences were percentage of participations in each step. Even though there was a small number of students who participated in the survey stage, there was a rather high percentage of students from the survey stage who agreed to join the interview stage. Table 16 presented the statistical comparison of FMS students and FMS instructors.

Table 16

Statistical Comparison of FMS Students and Instructors

	Total	Survey Responses	% of Survey Responses	Agree for Interview	% of Agree for Interview	Culture
Students	2270	133	5.86	96	72.18	Collectivist
Instructors	62	39	62.90	20	51.28	Collectivist

Modes of CAI that Instructor Liked Most by Cultural Contexts

No instructor was in the bureaucratic quadrant. One third of the instructors (3 of 9) liked simulation the best. Most of the collectivist instructors (3 of 4) liked simulation the best. It was obvious from the findings that only one corporate instructor liked instructional game the best, and only one collectivist instructor liked drill and practice the best. A corporate instructor liked instructional game and tutorial the best. One female

individualist decided not to declare which mode of CAI she liked most. She liked ~~least in~~ tutorial the least. She was an accounting major (see Table 17).

Table 17

Modes of CAI Instructors Liked Most by Cultural Contexts

Like Most	Collectivist	Corporate	Individualist	Grand Total
Drill and practice	1	0	0	1
Instructional game	0	1	0	1
N/A	0	0	1	1
Simulation	3	0	0	3
Tutorial	0	1	2	3
Grand Total	4	2	3	9

If only one mode of CAI should be provided, it should be simulation that instructors like most. Especially, all interviewed collectivist instructors liked simulation most. The number of instructors who liked tutorial most may be equal to the number of instructors who liked simulation, but their cultural context was not the overall FMS instructor cultural context, which was collectivist.

Modes of CAI that Instructor Liked Least by Cultural Contexts

Only collectivist instructors liked instructional game the least. Half of them (2 of 4) liked CAI least in instructional game. It was apparent that only corporate instructor liked CAI least in simulation. One of them liked CAI least in testing and one of them liked CAI least in simulation. It was further apparent that only individualist instructor liked CAI least in tutorial. One male individualist decided not to declare which mode of CAI he liked least. He liked most in tutorial. He was in human resource management of department of public administration. It was surprising that male individualist liked CAI most in tutorial and decided not to declare which mode he liked least, while female

individualist liked CAI least in tutorial and decided not to declare which mode she liked most (see Table 18). This remark was evidence to support that they were individualists who showed obviously their own high individual autonomy.

Table 18

Modes of CAI Instructors Liked Least by Cultural Contexts

Like Least	Collectivist	Corporate	Individualist	Grand Total
Demonstration	1	0	1	2
Instructional game	2	0	0	2
N/A	0	0	1	1
Simulation	0	1	0	1
Testing	1	1	0	2
Tutorial	0	0	1	1
Grand Total	4	2	3	9

The data supported the idea about appropriate CAI mode for FMS instructors that it should be simulation because only one corporate instructor liked CAI least in simulation. The other instructors liked the other modes of CAI the least.

Modes of CAI that Students Liked Most by Cultural Contexts

Half of the students (7 of 14) like drill and practice the best. Most of the collectivist students (3 of 5) like simulation the best. Most of the corporate students (3 of 5) like most drill and practice (see Table 19).

Table 19

Modes of CAI Students Liked Most by Cultural Contexts

Like Most	Bureaucratic	Collectivist	Corporate	Individualist	Grand Total
Drill and practice	1	1	3	2	7
Instructional game	0	0	1	1	2
Simulation	0	3	0	0	3
Tutorial	0	1	1	0	2

Grand Total	1	5	5	3	14

The data showed explicitly that students liked CAI most in drill and practice. However, FMS student cultural context was collectivist, consequently, simulation should be the most appropriate mode of CAI for them.

Modes of CAI that Students Liked Least by Cultural Contexts

Four tenth of the students (6 of 14) liked CAI least in tutorial. Most collectivist students (3 of 5) like it least. Almost half of the corporate students (2 of 5) liked CAI least in testing. Only one corporate student liked CAI least in problem solving (see Table 20).

Table 20

Modes of CAI Students Liked Least by Cultural Contexts

Like Least	Bureaucratic	Collectivist	Corporate	Individualist	Grand Total
Demonstration	0	1	1	0	2
Problem solving	0	0	1	0	1
Simulation	1	1	0	1	3
Testing	0	0	2	0	2
Tutorial	0	3	1	2	6
Grand Total	1	5	5	3	14

Considering concurrently both students' and instructors' preferences in modes of CAI, the appropriate mode of CAI should be simulation. Instructors liked CAI most in simulation and tutorial, while students did not like CAI in tutorial. So the "win-win" mode of CAI for both students and instructors should be simulation.

Summary

The grid and group typologies associated with FMS students and instructors were apparent. According to Douglas' (1982) grid and group typology, both FMS students and FMS instructors could be identified as a collectivist culture. For the grid consideration, both FMS students and FMS instructors were placed low in the continuum. For the group consideration, both FMS students and FMS instructors were placed high in the continuum. From the information shown, FMS as a whole should be identified as a collectivist culture.

Most participants were in the collectivist quadrant of cultural context. From 133 students who answered the grid and group cultural preference tool, there were 92 collectivist, 28 corporate, 11 individualist, and 2 bureaucratic students. From 39 instructors who answered the grid and group cultural preference tool, there were 26 collectivist, 10 individualist, and 3 corporate instructors. No instructor was in a bureaucratic cultural context. It was apparent that participants in different cultural contexts preferred different modes of CAI.

The grid and group typology was very useful in describing the cultural context of FMS students and instructors. Moreover, the typology was broad enough to identify appropriate patterns of CAI to be developed for FMS considered from FMS culture. In the next chapter, implication and further explanation of students and instructors preferences were presented.

CHAPTER VI

FINDINGS, CONCLUSIONS, IMPLICATIONS, & RECOMMENDATIONS

Although computer assisted instruction (CAI) is becoming increasingly popular, there are still questions about its appropriateness and whether it is an effective strategy in all situations. While a number of explanations may address this dilemma, one reason for the varying results in CAI effectiveness can be explained through Douglas's (1982) grid and group typology.

This qualitative case study used Douglas's typology. The participants in this case study included students and instructors from the Faculty of Management Sciences (FMS) at Prince of Songkla University (PSU). Multiple qualitative methods, including survey, interviews, observations, and document analysis, were used for data collection. The purposes of data collection and analysis were to characterize each person within the cultural contexts presented in Douglas' (1982) grid and group typology, present the data findings in reference to the framework and literature, and specifically answer the research questions.

In some stages of the research, data analysis and data collection occurred simultaneously. Data were triangulated by multiple sources, such as questionnaire responses, interview transcripts, observation field notes, and documents. Peer review

techniques were also used to ensure trustworthiness, as the researcher allowed other peer researchers to review the final data presentation.

The purpose of this study was to answer the following questions:

1. How does Douglas' (1982) grid and group typology explain the educational culture of the FMS at PSU?
2. What are students' and instructors' attitudes toward CAI?
3. What is the interrelationship of CAI practice and educational preferences among students and faculty?
4. How useful is Douglas' (1982) grid and group typology in understanding this interrelationship?
5. What other realities are revealed in this study?

Findings to these questions are summarized in the following section.

Summary of Findings

The first research question asks "How does Douglas' (1982) grid and group typology explain the educational culture of the FMS at PSU?" PSU is predominantly a strong grid institution. Explicit rules and roles are necessary to manage a large comprehensive university with several campuses. PSU has both high and low group characteristics; however, the dominant low-group characteristics place it more in the bureaucratic (high-grid/low-group) than the corporate (high-grid/high-group) category. As explained in chapter V, both FMS students and FMS instructors are mostly collectivist (low-grid/high-group) in the approach to their work and activities as well as their cultural preferences. Both actions and preferences are important to understand, as Kogan (1988) stated that "people's actions are based on a connection between how they think they

ought to behave and what they ought to aim towards, and how they feel about themselves and what they want" (p. 94).

From the beginning of the study, the researcher found indications of collectivist cultural traits. For example, when asking permission to contact participants, the Dean advised the researcher to contact instructors directly, rather than going through the bureaucratic structure. She suggested that the survey response rate should be high enough if the researcher contacted instructors straightforwardly. The Dean did not want to send a note to participants, because she felt the top down communication might cause them to question the research. This supports Harris (2005) view that collectivist contexts are characterized by lateral coordination schemes that are informal and flexible, and that hierarchical schemes are questionable to collectivist cultural members.

FMS's collectivist culture promotes cohesiveness and helps maintain values and standards in the existing group. Douglas (1982) posits that this type of cohesiveness often promotes a positive and collaborative work environment, because:

1. The individual's identification is granted through group membership.
2. Individual behavior is subject to controls exercised in the name of the group.
3. Authoritarian leadership and hierarchy are rejected.
4. The perpetuation of group goals and group survival is of utmost importance.

To support FMS to be a leading management school, new curricula were collaboratively developed by the faculty in each major. In order to create innovative and appropriate curricula, they had meetings several times for brain storming. Faculty collaborated and used consensus decision making, a process that not only seeks the

agreement of most participants, but also the resolution or mitigation of minority objections (Harris, 2005).

The second research question asks “What are students and instructors attitudes toward CAI?” While there were a small number of exceptions, the findings of this study showed that both students and instructors had a very positive attitude toward the use of CAI. They used computers to search for information, so they could retrieve it “quickly, easily, and comfortably.” Instructors communicated with students via e-mail and VCR. Students could communicate with others by means of the web board of VCR. In general, they used computers for searching information, both for teaching and personal interests, creating PowerPoint slides, preparing documents, as well as communicating via e-mail. One instructor’s comments are a good representation of many who use CAI:

> Some information is the information that you must pay for, for example information from Reuters. This is beneficial that we can retrieve the up-to-date information day by day from Reuters, especially information that I searched for were financial information. I searched exchange rate, baht currency, something like that.

They also expressed disadvantage in using CAI. One instructor provided hard copy sheets for students but did not upload them to VCR. She said she did this because, “I do not prefer gazing the screen, so I should not assign students to fix their eyes on the screen.” She was the only one who raised this point to be a disadvantage of using CAI.

The third research question asks “What is the interrelationship of CAI practice and educational preferences among students and faculty?” It is not wise to draw specific cause and effect relationships between grid-group preferences and practices among

students and faculty. However, data did provide some insight into organizational culture and CAI use. For example, while some participants in the student and faculty population indicated a variety of preferences, the educational preference for the majority of both groups was collectivist. It was gleaned from the data that corporate instructors liked instructional games and tutorials, and collectivist instructors liked simulation, drills and practice.

One female individualist decided not to declare which mode of CAI she liked most, which in itself gives indication of an individualist, autonomous cultural mindset. One male individualist also chose not to declare which mode of CAI he liked least. He commented:

> I can't answer that I like least because I do not use. I do not do anything about problem solving. I do not use simulation as well. I do not use game too. In my opinion, I think that for testing I must have knowledge in high level enough to create imagination to use it. After using it, if it is not work, it will be improved later. But now I can imagine only it can help me do my work more convenient. So it's stop only in [tutorial] teaching. I still do not step to drill and practice. Moreover I am not interest to follow them [changes of technology]. I use computer just as an easy tool.

It was somewhat interesting that a male individualist liked the tutorial the most and decided not to declare which mode he liked least, while female individualist liked tutorial the least and decided not to declare which mode she liked most. From another point of view, this remark provided evidence to support that they were individualists who showed high individual autonomy.

Considering concurrently both students' and instructors' points of view, the appropriate mode of CAI should be simulation, because instructors liked most simulation and tutorial, while students like least tutorial. So, the mutually beneficial and satisfying solution for both students and instructors should be simulation.

The fourth research question asks "How useful is Douglas' (1982) grid and group typology in understanding this interrelationship?" Douglas's typology is useful in explaining preferences and behaviors as they occur in cultural contexts. The literature showed that the typology has been proven useful in studying technology use in higher education settings in the United States (Stansberry, 2001). It also proved useful in looking at a higher education environment in Thailand.

Grid and group theory offered the language to explain similarities and differences in various settings, and consequently, the researcher could anticipate forms of activity and within the typological categories, the variance in intra-organizational behavior.

In relation to CAI, grid-group theory provided a way to explain technology preferences and cultural behavior. This is important because many CAI formats are focused on who gets or uses technology and why. In addition to this focus, grid-group theory allowed the researcher to explain who prefers certain technology and why. So, as the theory argues, while persons pursue their interests efficiently as a rational choice, their preferences, interests, and behaviors can be somewhat distinctive and predictable.

The last research question asks "What other realities are revealed in this study?" Data collected from FMS proved to be somewhat easy to determine placement on the grid and group continuum. Triangulation of data was very helpful to support all findings which showed the same results in each method of collecting data. However, actions and

behaviors are not determined only by the culture. For example, there are other factors such as emotional maturity, personality, and family background that help shape behavior.

Grid and group did not explain the factor of age in relation to CAI use. Data indicated that most instructors prefer using computers for work, while most students prefer playing games. The younger students obviously grew up with this type of technology and were more familiar with it. Some instructors informed me that they used the computer for entertainment too, but only after completing their work. For instructors, work comes first. For some students, play comes first, and for others, work and play occurs simultaneously.

Grid and group theory was useful in categorizing and indicating the differences in various preferences and behaviors. However, it does not give clear indication as to how to bridge a gap between those differences. In order to bring about change, it could be useful to supplement grid and group theory with other theories that better explain step by step methods.

Conclusions

Weaver (2000) defined culture as a system of interconnected parts where "people…have roughly the same values, beliefs, behaviors, perceptions of reality and ways of communicating" (p. 72). It was very important to use cultural theory in explaining CAI because it encompassed not only behaviors, but preferences as well. In understanding CAI, a big consideration is what subjects and modes are most suitable. There were many suitable criteria for selecting a mode of CAI as well as subjects that could be taught using computers. As instructor05 said "it depends on subject that you teach too. Some mode may fit with some subject while it is not fit with some subject."

Instructor08 said that “indeed I want in all subjects”, and “all subjects need computer assisted instruction.” But if only one subject will be provided with CAI, “it should be the fundamental subject, subject for the first year students.” The reason was “because more students can use it.”

FMS instructors gradually created their own CAI. Most instructors created and updated their PowerPoint presentations to make them easy to understand. Moreover, the information from the students revealed that a male individualist recorded the content related to the subjects he taught. He uploaded his files to VCR. The students could download them and did their self study.

The findings showed the modes of CAI that students and instructors liked most and liked least. If the FMS administrators have to choose only one mode to provide CAI for students, the findings suggested simulation to be an appropriate mode of CAI for FMS students and instructors. Simulation also fits the collectivist cultural mindset and can be used instead of other modes of CAI when there is a need to increase motivation, transfer of learning, or efficiency (Alessi & Trollip, 1991). However, faculty should “not hesitate to experiment with new practices or technologies that might enhance the teaching and learning environment” (Harris, 2005, p. 85).

The students said that the instructors in the Faculty of Science recorded videos of their lectures and uploaded them to VCR that the students could download to do their self study or review whatever they learned in class. The Students preferred having them. One of the quick and easy ways to have CAI is recording video of ordinary lecture classes and then uploads them to VCR as they did. However, a male collectivist instructor from

information technology management major commented that “Teacher who use video recording must prepare-many steps. It consumes so much time to create a good CAI.”

One instructor with collectivist preferences suggested that the first step that FMS management should do is “they should let teachers realize the significance of CAI first. If some teachers are old, or someone anti using CAI, training can help them understand this.” All FMS instructors realized the significance of CAI. In their opinion, every subject should have CAI. They always used computer for their work. The researcher thought that FMS already passed the realization step. However, the training step was considerable. There was some training in the past, but the time may not be appropriate. Only a few instructors joined the training. The appropriate date and time, presenters, and content were the important things that should be considered.

Implications

The findings from this case study impacted theory, research, and practice. Following is a discussion of these areas.

Practice

While the purpose of qualitative research is not to generalize, the results of this study may possibly be transferable to other similar contexts. To enhance the transferability aspects of this study, the researcher provided a detailed description of the FMS at Prince of Songkla University. It was to this population that the findings and conclusions have the most applicability.

This study may benefit teachers and students involved in CAI in Thailand, because it will give insight how the classroom environment affects the education practices of students by:

1. Reporting and examining the learning preferences of students about CAI;

2. Identifying appropriate patterns of CAI to be developed;

3. Identifying the appropriate method for acquiring CAI;

4. Determining the extent to which student perceive CAI to their specific cultural context using Douglas's grid and group typology (1982) model.

Regarding policy and practice, this study also offers a good example of different grid and group mindsets functioning in a productive way. The suggestion about simulation may be considered from the collectivist point of view. However, the policy analysis was severely challenged. "The challenge is to cope intelligently and creatively with pluralism and diversity. One important way of doing this is to develop a kind of policy analysis that respects cultural differences and makes them allies instead of enemies" (Hoppe, 2002, p. 235).

Research

This study used a case study method to examine students' preferences in CAI. It contributes to the current body of literature, because it provides another example of how grid and group typology classifies students' preferences and practices regarding CAI. Moreover, this study helps to fill the information gap and add more information to research from the western view to the eastern context. This study was one of the first comprehensive explanations of CAI use in a Thai university. Thus, the study adds to the body of literature providing a vivid case study of CAI and preferences among faculty and students at a Thai university.

Theory

This study demonstrated how the cultural theory of grid and group can be used in a Thai educational institution. The translation of the grid and group questionnaires from English to Thai serves to benefit the theory base as well. The study tested this framework's usefulness in classroom settings to determine its theoretical significance for future case studies regarding learning culture. Moreover, it is believed that the study contributes to development of the theory by expanding the propositions. The explanation of Douglas's framework as well as the way it was utilized in this study can provide a model for other studies using this theory.

Recommendations

FMS is part of a larger cultural context. This cultural context, PSU, which is also part of the overall Thai educational cultural context, is predominately a bureaucratic high-grid, low-group environment with explicit institutional rules and roles, which are necessary to manage a large multi-campus university. FMS on the other hand, is primarily a low-grid and high-group work environment. The evidence supported a collectivist (low-grid, high-group) cultural context. Thus, in Douglas's typology, these two cultural settings are in opposite or diagonal quadrants of the cultural scale.

According to the theory, differences may sometimes result in prevalence of both grid and group differences. However, difference can support good working environments, as Harris (2005) states, "conflict does not have to be inevitably destructive and can, in fact, be very helpful in decision making and organizational enhancement" (p. 172).

Each type of culture has its strengths and weaknesses (Douglas, 1996). Collectivists (low-grid, high-group) will likely oppose some bureaucratic (high-grid, low-

group) practices because both factions differ on fundamental value orientations (Harris, 2005). In understanding these organizational variations and continuing to promote good working atmospheres, Harris's (2005, p. 177) suggests:

- Embrace the belief that conflict is a means to promote positive health in your school. If everyone is thinking the same way, no one is thinking very much.
- Seek to identify the roots of conflict and tension through contextually appropriate information channels and by understanding prevalent social games.
- Consider both individual and group interests.
- Value all people in the conflict.
- Strive for win-win solutions when possible.

Computers and communication are so strongly related that one cannot break them apart. Students used mobile phones all the time to communicate with their friends or relatives. There are many ways that they can use their tools to help in learning, for example, they can make their own CAI by recording instructors' lectures. They can transfer files from their mobile phones to computers for further study. Moreover, students and instructors can communicate easier with each other. Whatever the researcher recommended, it is absolutely based on the reality that their mobile phones support these features.

However, one thing instructors should not forget is the KISS principle. KISS, or "Keep It Short and Simple," states that design simplicity should be a key goal and that unnecessary complexity should be avoided. According to Coombs (2005), "The simpler the technology, the less it intrudes on the communication" (p. 58). Animation in CAI

makes it interesting. But there should be an appropriate amount, as Coombs (2005) suggested," to avoid using powerful and exciting tools merely to impress the student with your technical mastery" (p. 58). The researcher agrees with him that the crucial things that instructors should do are communicating content to the students and having interactions with the students. Instructors should be concerned not only with the amount but also the quality of interactions (Kelsey, 1999).

Interaction between instructor and students requires a two-way intentional relationship, which is both an art and a tact of teaching. Van Manen (1991) stated:

> The teacher intends the students, to learn and grow with respect to the kinds of the things that the teacher teaches. In turn, the students need to have a desire, willingness, and a preparedness to learn.(p. 77)

CAI solely is only a medium or tool. Instructors can use it to assist students to gain and grow in knowledge. Instructors should seek the most appropriate technology available.

Harris (2005) stated that institutions should include "business and community leaders in helping to define authentic learning strategies that require the application of various skills and subject areas" (p. 160). FMS has many alumni which are owners or administrators of companies or factories nearby the province. PSU and FMS should continue to develop linkages with those entities.

Harris (2005) suggested that "a new metaphor has emerged that expands the teacher's role behavior to more than just teaching" (p. 7). McKeachie and Svinicki (2006) recommended that "teachers should create conditions that enable students to expect to succeed" (p. 149). Motivation is important to consider if we want to enhance student

learning. Knowing more about how students are motivated and what teacher can do to structure a class that positively affects student motivation can make a significant difference in student engagement and learning. (McKeachie & Svinicki, 2006). Whatever teachers do should be done for students' benefit. Teachers hope that it will make students be skillful graduates who can serve their organization's need in their career in the future. Instructors use computer assisted instruction with hope to make students be skillful. However, human connection among students at university level is still the crucial part of education. Face-to-face learning should not completely replaced by online learning. Machine still has no real feeling at all.

In my opinion, instructors should use both face-to-face learning and online learning to convey the feeling of care, share, love, and respect through the way they teach. Using both machine and human to enhance students' achievement should be a considerably inevitable duty of instructors. It is an art of teaching. Finally, I would like to present an acronym that looks like my name "AREE- Aesthetic Relationship Engender Edification". It means that after instructors think for a while and try to use art of teaching and blend new technology with good relationship with students, the students will gain knowledge and accomplishment they expected.

Research that could add to the current body of knowledge includes the following:

1. Quantitative studies that focus on factors that promote student learning in CAI use.
2. Studies that include other theories to frame the research. For example, Fullan (2001) can be used to see how the stages of change can bring about a stronger learning atmosphere.

3. Teaching and learning theories should also be incorporated in further research.
4. Stansberry (2005) also incorporates a type of contingency theory in understanding technology and learning. Her approach allows researchers to assess teaching styles and technology integration, identify instructional strategies that match teaching styles, and accommodate instructional technology to instructional strategies.

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Appendices

Appendix A

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date:	Friday, June 13, 2008
IRB Application No	ED0898
Proposal Title:	A Grid and Group Explanation of Students' and Instructors' Preferences in CAI: A Case Study of University Classrooms in Thailand
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 6/12/2009

Principal Investigator(s):

Aree Limwudhikraijirath
Moo 3, Tambol Korhong, Hat Songkhla, 90112 THAILAND,

Edward Harris
308 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

Appendix B

Letter to the Dean of FMS

บันทึกข้อความ

ที่ มอ 460/ วันที่ 16 มิถุนายน 2551

เรื่อง ขอความอนุเคราะห์ประชาสัมพันธ์ให้นักศึกษาตอบแบบสอบถามเพื่อให้ข้อมูลวิจัย

เรียน คณบดี คณะวิทยาการจัดการ

ตามที่อ. อารีย์ ลิ้มวุฒิไกรจิรัฐ ภาควิชาบริหารธุรกิจ คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์ ได้รับอนุมัติให้ลาไปศึกษาระดับปริญญาเอก สาขาวิชาการสอนในระดับอุดมศึกษา ณ OKLAHOMA STATE UNIVERSITY ประเทศสหรัฐอเมริกา ด้วยทุนมหาวิทยาลัยสงขลานครินทร์ (ทุนประเภท 1 ก) มีกำหนด 5 ปี (โดยในแต่ละปีจะลาไปศึกษาต่างประเทศเป็นช่วง ๆ ครั้งละ 3-4 เดือน) นั้น

บัดนี้ถึงเวลาของการเก็บข้อมูลวิจัยสำหรับ Dissertation แล้ว จึงขอความร่วมมือจากท่านช่วยประชาสัมพันธ์ให้นักศึกษาปริญญาตรีหลักสูตรปกติ ทุกสาขาวิชา ของคณะวิทยาการจัดการ ช่วยให้ข้อมูลวิจัยสำหรับ Dissertation ของ อ. อารีย์ ลิ้มวุฒิไกรจิรัฐ หัวข้อวิจัยคือ "A Grid and Group Explanation of Students' and Instructors' Preferences in CAI: A Case Study of University Classrooms in Thailand" โดยไปตอบแบบสอบถามที่ http://frontpage.okstate.edu/coe/aree1/

ในหน้าแรก จะเป็นภาษาอังกฤษ ตามรูปแบบมาตรฐานของแบบสอบถาม Online ของ Oklahoma State University ถ้าท่านยอมรับที่จะตอบแบบสอบถาม กรุณาคลิกที่ Agree to participate ก็จะเข้าสู่หน้าแบบสอบถามที่เป็นภาษาไทย

จึงเรียนมาเพื่อขอความร่วมมือในการประชาสัมพันธ์ให้นักศึกษาปริญญาตรี หลักสูตรปกติ ทุกสาขาวิชา ของคณะวิทยาการจัดการ ช่วยให้ข้อมูล โดยการตอบแบบสอบถาม ด้วย จักขอบคุณยิ่ง

อารีย์ ลิ้มวุฒิไกรจิรัฐ
ผู้วิจัย

Appendix C

Grid and Group Cultural Preference Tool

English Version for Students

Grid and Group Cultural Preference Tool

General information of **STUDENT** of the Faculty of Management Sciences, Prince of Songkla University who answered this questionnaire---

Please inform your name and surname:

Gender:	
○ Male	○ Female

Age (years):			
○ less than 21 years	○ 21-25 years	○ 26-30 years	○ 31-35 years
○ 36-40 years	○ more than 40 years		

Major:	
○ Accounting	○ Finance
○ Marketing	○ Information Technology Management
○ Human Resource Management---Business Administration	○ Business Computer
○ Human Resource Management---Public Administration	○ Rural Administration
○ Public Policy	

Your Educational Status:	
○ Year 1	○ Year 2
○ Year 3	○ Year 4
○ Other ... please specify	

INSTRUCTIONS

Below are 25 items. Each item reflects a continuum from 1 to 8. For each item, read the entire item and choose the statement that you think best represents your **school site** (i.e., *not the school district*). Then, on the continuum, mark the button that represents the degree to which that statement applies to your **school site** (i.e., *not the school district*).

There are no "good" or "bad" responses to these items. The numbers 1and 8 represent extremes along a continuum, with numbers 2-7 providing a continuous scale between the two extremes. For example, if the statement were:

In my school we drink: Weak Coffee (1).....Strong Coffee (8), the strength of the coffee could be indicated along the continuum of 1 through 8; however, one answer would not be better than another.

GRID CONSIDERATIONS

1. I prefer a work atmosphere where authority structures are:

Decentralized/ non-hierarchical	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Centralized/ hierarchical

2. I prefer a work atmosphere where my role(s) is/are:

	1	2	3	4	5	6	7	8	
Non-specialized / no explicit job descriptions	○	○	○	○	○	○	○	○	Specialized / explicit job descriptions

3. I prefer a work atmosphere where teachers have:

	1	2	3	4	5	6	7	8	
Full autonomy in textbook selection	○	○	○	○	○	○	○	○	No autonomy in textbook selection

4. I prefer a work atmosphere where individual teachers have:

	1	2	3	4	5	6	7	8	
Full autonomy in generating their educational goals	○	○	○	○	○	○	○	○	No autonomy in generating their educational goals

5. I prefer a work atmosphere where individual teachers have:

	1	2	3	4	5	6	7	8	
Full autonomy in choosing instructional methods/strategies	○	○	○	○	○	○	○	○	No autonomy in choosing instructional methods/strategies

6. I prefer a teaching and learning atmosphere where students are:

Encouraged to participate/take ownership of their education	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Discouraged from participating/taking ownership of their education

7. I prefer a work atmosphere where teachers obtain instructional resources (i.e., technology, manipulatives, materials, tools) through:

Individual competition / negotiation	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Administrative allocation

8. I prefer a teaching and learning atmosphere where instruction is:

Individualized / personalized for each student	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Not individualized / personalized for each student

9. I am motivated by:

	1	2	3	4	5	6	7	8	
Intrinsic / self-defined interests	○	○	○	○	○	○	○	○	Extrinsic / institutional rewards

10. I prefer a work atmosphere where hiring decision are:

	1	2	3	4	5	6	7	8	
Decentralized / controlled by teachers	○	○	○	○	○	○	○	○	Centralized / controlled by administrator(s)

11. I prefer a work atmosphere where class schedules are determined through:

	1	2	3	4	5	6	7	8	
Individual teacher negotiation	○	○	○	○	○	○	○	○	Institutional rules / routines

12. I prefer a work atmosphere where rules and procedures are:

	1	2	3	4	5	6	7	8	
Few / implicit	○	○	○	○	○	○	○	○	Numerous / explicit

GROUP CONSIDERATIONS

1. I prefer a work atmosphere where instructional activities are initiated / planned by::

Individual teachers working alone	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	All educators working collaboratively

2. I prefer a work atmosphere where socialization and work are:

Separate / dichotomous activities	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Incorporated / united activities

3. I prefer a work atmosphere where intrinsic rewards primarily benefit:

The individual	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Everyone at the school site

4. I prefer a work atmosphere where teaching and learning are planned / organized around:

	1	2	3	4	5	6	7	8	
Individual teacher goals/interests	○	○	○	○	○	○	○	○	Group goals / interests

5. I prefer a work atmosphere where performance is evaluated according to:

	1	2	3	4	5	6	7	8	
Individual teacher goals, priorities, and criteria	○	○	○	○	○	○	○	○	Group goals, priorities, and criteria

6. I prefer a work atmosphere where members work:

	1	2	3	4	5	6	7	8	
In isolation toward goals and objectives	○	○	○	○	○	○	○	○	Collaboratively toward goals and objectives

7. I prefer a work atmosphere where curricular goals are generated:

	1	2	3	4	5	6	7	8	
Individually	○	○	○	○	○	○	○	○	Collaboratively

8. I prefer a work atmosphere where communication flows primarily through:

	1	2	3	4	5	6	7	8	
Individual, informal networks	○	○	○	○	○	○	○	○	Corporate, formal networks

9. I prefer a work atmosphere where instructional resources are controlled / owned:

	1	2	3	4	5	6	7	8	
Individually	○	○	○	○	○	○	○	○	Collaboratively

10. I prefer a work atmosphere where educators and students have:

	1	2	3	4	5	6	7	8	
No allegiance / loyalty to the school	○	○	○	○	○	○	○	○	Much allegiance / loyalty to the school

11. I prefer a work atmosphere where responsibilities of teachers and administrators are:

	1	2	3	4	5	6	7	8	
Ambiguous / fragmented with no accountability	○	○	○	○	○	○	○	○	Clear / communal with much accountability

12. I prefer a work atmosphere where most decisions are made:

Privately by factions or independent verdict	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Corporately by consensus or group approval

13. Please indicate your degree of satisfaction with professional development offered at your site:

Extremely Dissatisfied	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Extremely Satisfied

If you are appreciate to be interviewed for about 15-30 minutes
Please inform your e-mail or telephone number for contact to make an appointment for interview:

Thanks for your cooperation in answering this questionnaire

Submit Form | Reset Form

Appendix D

Grid and Group Cultural Preference Tool

Thai Version for Students

Grid and Group Cultural Preference Tool

ข้อมูลทั่วไป ของ**นักศึกษา** คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์ ที่ตอบแบบสอบถามนี้---

กรุณาบอกชื่อ และ นามสกุลของท่าน:

เพศ:	
○ ชาย	○ หญิง

อายุ (ปี):			
○ น้อยกว่า 21 ปี	○ 21-25 ปี	○ 26-30 ปี	○ 31-35 ปี
○ 36-40 ปี	○ มากกว่า 40 ปี		

สาขาวิชาเอก:	
○ บัญชี	○ การเงิน
○ การตลาด	○ การจัดการเทคโนโลยีสารสนเทศ
○ การบริหารทรัพยากรมนุษย์ ---บริหารธุรกิจ	○ คอมพิวเตอร์ธุรกิจ
○ การบริหารทรัพยากรมนุษย์ ---รัฐประศาสนศาสตร์	○ การบริหารและการปกครองท้องถิ่น
○ นโยบายสาธารณะ	

สถานะทางการศึกษาของท่าน:	
○ นักศึกษาปีที่ 1	○ นักศึกษาปีที่ 2
○ นักศึกษาปีที่ 3	○ นักศึกษาปีที่ 4
○ อื่นๆ โปรดระบุ	

คำแนะนำ

ค่าถามมีทั้งหมด 25 ข้อ แต่ละข้อมีตัวเลือกที่เรียงลำดับบนเส้นวงกลมตั้งแต่ลำดับที่ 1 - 8
ก่อนที่จะเลือกแต่ละลำดับข้อกรุณาอ่านข้อความทั้งหมดให้ชัดเจน
หลังจากนั้นให้กาหมายเลขที่ท่านคิดว่ามีความสอดคล้องกับสถานศึกษาของท่านมากที่สุดบนวงกลมในแต่ละข้อ

ไม่มีตัวเลือกใดที่ดีหรือไม่ดี เช่น หมายเลข 1-8 บนเส้นบอกถึงความต่างกันสูงสุดของแต่ละขั้ว ระหว่างหมายเลข 2-7 บอกถึงความมากน้อยบนมาตรวัดที่ต่อเนื่องกันเรียงตามลำดับจากน้อยไปมากที่มีความเชื่อมโยงของทั้งสองขั้ว:

ตัวอย่าง

ในสถานศึกษาของข้าพเจ้ามีการดื่มกาแฟที่ ไม่มีความเข้มข้น (1).....การดื่มกาแฟที่มีความเข้มข้นมาก (8)
ความเข้มข้นของกาแฟบ่งบอกถึงระหว่างหมายเลข 1 - 8 แต่อย่างไรก็ตามไม่มีคำตอบใดดีกว่าอีกคำตอบหนึ่ง

การพิจารณาคำตอบแบบกรอบ

1. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีโครงสร้างอำนาจดังต่อไปนี้:									
กระจายอำนาจ/ไม่มีระดับชั้น	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	รวมอำนาจ/มีระดับชั้น
2. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ข้าพเจ้ามีบทบาทดังนี้ :									
ไม่มีคำบรรยายลักษณะงานที่ชัดเจน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มีคำบรรยายลักษณะงานที่ชัดเจน
3. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกมี:									
มีอำนาจในการเลือกตำราเรียน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีอำนาจในการเลือกตำราเรียน

4. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกแต่ละคนมี:

กำหนดเป้าหมายในการทำงานเองได้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	กำหนดเป้าหมายในการทำงานเองไม่ได้

5. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกแต่ละคนมี:

มีอำนาจในการกำหนดวิธีการ/กลยุทธ์ในการทำงานเองได้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีอำนาจในการกำหนดวิธีการ/กลยุทธ์ในการทำงานเองได้

6. ข้าพเจ้าชอบการสอนและการเรียนรู้ในบรรยากาศที่นักเรียนนักศึกษามีการ:

มีส่วนร่วม/มีความเป็นเจ้าของในการศึกษาของตนเอง	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีส่วนร่วม/ไม่มีความเป็นเจ้าของในการศึกษาของตนเอง

7. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ผู้ปฏิบัติงานได้รับทรัพยากรทางการศึกษา (เช่น เทคโนโลยี, วัสดุ,อุปกรณ์, เครื่องมือ) โดย:

การเจรจาต่อรอง/การแข่งขันกันยื่นขอของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ผู้บริหารจัดสรรหาให้

8. ข้าพเจ้าชอบบรรยากาศในการเรียนการสอนที่เป็นแบบ:									
เน้นความเป็นปัจเจกชน/ความเป็นส่วนตัวของนักเรียนนักศึกษาแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่เน้นความเป็นปัจเจกชน/ความเป็นส่วนตัวของนักเรียนนักศึกษาแต่ละคน
9. ข้าพเจ้าได้รับแรงกระตุ้นจาก:									
ภายใน/ความสนใจของตนเอง	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ภายนอก/ รางวัลหรือคำชมเชย
10. ข้าพเจ้าชอบบรรยากาศในการทำงานซึ่งการตัดสินใจในการจ้างงานเป็นแบบ:									
กระจายอำนาจ / ถูกควบคุมโดยผู้ปฏิบัติงาน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	รวมอำนาจ / ถูกควบคุมโดยผู้บริหาร
11. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ตารางการทำงานถูกกำหนดโดย:									
การเจรจาต่อรองของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	กฎและระเบียบของสถาบัน
12. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีกฎกติกาและระเบียบการแบบ:									
เล็กน้อย / คลุมเครือ	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มากมาย / ชัดเจน

การพิจารณาคำตอบแบบกลุ่ม

1. ข้าพเจ้าชอบบรรยากาศในการทำงานที่องค์กรได้จัดทำกิจกรรม / วางแผนโดย:									
แต่ละคนวางแผนเองโดยลำพัง	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ทั้งหมดร่วมมือกันวางแผน
2. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สังคมและการทำงานเป็นแบบ:									
แยกกันทำ	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ร่วมมือกันทำเป็นหนึ่งเดียว
3. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีรางวัลและคำชมเชยที่ได้รับแก่:									
เฉพาะแต่ละบุคคล	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ทุกคนในกลุ่ม

4. ข้าพเจ้าชอบบรรยากาศในการทำงานที่การเรียนการสอนถูกวางแผนไว้โดยอิง:									
เป้าหมายและความสนใจของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	เป้าหมายและความสนใจของกลุ่ม
5. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีการประเมินผลการทำงานที่เป็นไปตาม:									
เป้าหมายและกฎเกณฑ์ของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	เป้าหมายและกฎเกณฑ์ของกลุ่ม
6. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกทำงานโดย:									
แยกกันทำตามเป้าหมายและวัตถุประสงค์ที่กำหนดไว้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ทำงานร่วมกันตามเป้าหมายและวัตถุประสงค์ที่กำหนดไว
7. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีหลักสูตรการเรียนการสอนแบบ:									
กำหนดแนวทางโดยแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ร่วมมือกันกำหนดแนวทาง

8. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีการสื่อสารโดย :									
ผ่านตัวบุคคล , ไม่มีเครือข่ายเป็นทางการ	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ผ่านหมู่คณะ, มีเครือข่ายเป็นทางการ
9. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ทรัพยากรทางการศึกษา ถูกควบคุมหรือเป็นเจ้าของโดย:									
แต่ละบุคคล	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ร่วมมือกัน
10. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ครูผู้สอนและนักเรียนมีลักษณะ:									
ไม่มีความจงรักภักดี / ซื่อสัตย์ต่อสถานศึกษา	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มีความจงรักภักดี / ซื่อสัตย์ต่อสถานศึกษามาก

11. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ความรับผิดชอบของผู้ปฏิบัติงานและผู้บริหาร:									
คลุมเครือ / ไม่มีความรับผิดชอบมาก	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ชัดเจน / มีความรับผิดชอบมาก
12. ข้าพเจ้าชอบบรรยากาศในการทำงานที่การตัดสินในส่วนใหญ่เป็นแบบ:									
ส่วนตัว แต่ละคนมีอิสระ	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	เห็นพ้องต้องกัน หรืออนุมัติจากกลุ่ม
13. โปรดระบุระดับความพอใจในการพัฒนาด้านวิชาชีพที่สถาบันจัดให้ :									
มีความไม่พอใจมาก	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มีความพอใจมาก

ถ้าท่านยินดีจะให้สัมภาษณ์เป็นเวลาประมาณ 15-30 นาที
กรุณาบอก e-mail หรือ เบอร์โทรศัพท์ เพื่อจะได้ติดต่อ นัดหมายเวลาสัมภาษณ์ได้:

ขอขอบคุณในความร่วมมือในการตอบแบบสอบถามนี้

Submit Form Reset Form

Appendix E

Grid and Group Cultural Preference Tool

English Version for Instructors

Grid and Group Cultural Preference Tool

General information of **INSTRUCTOR** of the Faculty of Management Sciences, Prince of Songkla University who answered this questionnaire---

Please inform your name and surname:

Gender:	
○ Male	○ Female

Age (years):			
○ less than 21 years	○ 21-25 years	○ 26-30 years	○ 31-35 years
○ 36-40 years	○ 41-45 years	○ 46-50 years	○ 51-55 years
○ 56-60 years	○ more than 60 years		

In which major you work for:	
○ Accounting	○ Finance
○ Marketing	○ Information Technology Management
○ Marine Merchant	○ Hotel Management
○ Human Resource Management---Business Administration	○ Human Resource Management---Public Administration
○ Rural Administration	○ Public Policy
○ Other ... please specify	

How many years you have worked as an instructor:		
○ 1-5 years	○ 6-10 years	○ 11-15 years
○ 16-20 years	○ 21-25 years	○ more than 25 years

How many years you have worked as an instructor at FMS:		
○ 1-5 years	○ 6-10 years	○ 11-15 years
○ 16-20 years	○ 21-25 years	○ more than 25 years

Your highest education :		
○ Bachelor	○ Master	○ Doctorate
○ Other ... please specify		

Where did you graduated from:	
○ Thailand	○ Asia other than Thailand
○ Europe	○ Northern America
○ Other ... please specify	

INSTRUCTIONS

Below are 25 items. Each item reflects a continuum from 1 to 8. For each item, read the entire item and choose the statement that you think best represents your **school site** (i.e., *not the school district*). Then, on the continuum, mark the button that represents the degree to which that statement applies to your **school site** (i.e., *not the school district*).

There are no "good" or "bad" responses to these items. The numbers 1and 8 represent extremes along a continuum, with numbers 2-7 providing a continuous scale between the two extremes. For example, if the statement were:

In my school we drink: Weak Coffee (1).....Strong Coffee (8), the strength of the coffee could be indicated along the continuum of 1 through 8; however, one answer would not be better than another.

GRID CONSIDERATIONS

1. I prefer a work atmosphere where authority structures are:

Decentralized/ non-hierarchical	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Centralized/ hierarchical

2. I prefer a work atmosphere where my role(s) is/are:

Non-specialized / no explicit job descriptions	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Specialized / explicit job descriptions

3. I prefer a work atmosphere where teachers have:

Full autonomy in textbook selection	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	No autonomy in textbook selection

4. I prefer a work atmosphere where individual teachers have:

Full autonomy in generating their educational goals	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	No autonomy in generating their educational goals

5. I prefer a work atmosphere where individual teachers have:

Full autonomy in choosing instructional methods/strategies	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	No autonomy in choosing instructional methods/strategies

6. I prefer a teaching and learning atmosphere where students are:

	1	2	3	4	5	6	7	8	
Encouraged to participate/take ownership of their education	○	○	○	○	○	○	○	○	Discouraged from participating/taking ownership of their education

7. I prefer a work atmosphere where teachers obtain instructional resources (i.e., technology, manipulatives, materials, tools) through:

	1	2	3	4	5	6	7	8	
Individual competition / negotiation	○	○	○	○	○	○	○	○	Administrative allocation

8. I prefer a teaching and learning atmosphere where instruction is:

	1	2	3	4	5	6	7	8	
Individualized / personalized for each student	○	○	○	○	○	○	○	○	Not individualized / personalized for each student

9. I am motivated by:

	1	2	3	4	5	6	7	8	
Intrinsic / self-defined interests	○	○	○	○	○	○	○	○	Extrinsic / institutional rewards

10. I prefer a work atmosphere where hiring decision are:

	1	2	3	4	5	6	7	8	
Decentralized / controlled by teachers	○	○	○	○	○	○	○	○	Centralized / controlled by administrator(s)

11. I prefer a work atmosphere where class schedules are determined through:

	1	2	3	4	5	6	7	8	
Individual teacher negotiation	○	○	○	○	○	○	○	○	Institutional rules / routines

12. I prefer a work atmosphere where rules and procedures are:

	1	2	3	4	5	6	7	8	
Few / implicit	○	○	○	○	○	○	○	○	Numerous / explicit

GROUP CONSIDERATIONS

1. I prefer a work atmosphere where instructional activities are initiated / planned by::

Individual teachers working alone	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	All educators working collaboratively

2. I prefer a work atmosphere where socialization and work are:

Separate / dichotomous activities	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Incorporated / united activities

3. I prefer a work atmosphere where intrinsic rewards primarily benefit:

The individual	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Everyone at the school site

4. I prefer a work atmosphere where teaching and learning are planned / organized around:

	1	2	3	4	5	6	7	8	
Individual teacher goals/interests	○	○	○	○	○	○	○	○	Group goals / interests

5. I prefer a work atmosphere where performance is evaluated according to:

	1	2	3	4	5	6	7	8	
Individual teacher goals, priorities, and criteria	○	○	○	○	○	○	○	○	Group goals, priorities, and criteria

6. I prefer a work atmosphere where members work:

	1	2	3	4	5	6	7	8	
In isolation toward goals and objectives	○	○	○	○	○	○	○	○	Collaboratively toward goals and objectives

7. I prefer a work atmosphere where curricular goals are generated:

	1	2	3	4	5	6	7	8	
Individually	○	○	○	○	○	○	○	○	Collaboratively

8. I prefer a work atmosphere where communication flows primarily through:

	1	2	3	4	5	6	7	8	
Individual, informal networks	○	○	○	○	○	○	○	○	Corporate, formal networks

9. I prefer a work atmosphere where instructional resources are controlled / owned:

	1	2	3	4	5	6	7	8	
Individually	○	○	○	○	○	○	○	○	Collaboratively

10. I prefer a work atmosphere where educators and students have:

	1	2	3	4	5	6	7	8	
No allegiance / loyalty to the school	○	○	○	○	○	○	○	○	Much allegiance / loyalty to the school

11. I prefer a work atmosphere where responsibilities of teachers and administrators are:

	1	2	3	4	5	6	7	8	
Ambiguous / fragmented with no accountability	○	○	○	○	○	○	○	○	Clear / communal with much accountability

12. I prefer a work atmosphere where most decisions are made:									
Privately by factions or independent verdict	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Corporately by consensus or group approval
13. Please indicate your degree of satisfaction with professional development offered at your site:									
Extremely Dissatisfied	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Extremely Satisfied

If you are appreciate to be interviewed for about 15-30 minutes
Please inform your e-mail or telephone number for contact to make an appointment for interview:

Thanks for your cooperation in answering this questionnaire

Submit Form | Reset Form

Appendix F

Grid and Group Cultural Preference Tool

Thai Version for Instructors

Grid and Group Cultural Preference Tool

ข้อมูลทั่วไปของผู้ตอบแบบสอบถามที่เป็น **ครู อาจารย์ ผู้สอน** ของคณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์ ::

กรุณาบอกชื่อ และ นามสกุลของท่าน:

เพศ:	
○ ชาย	○ หญิง

อายุ (ปี):			
○ น้อยกว่า 21 ปี	○ 21-25 ปี	○ 26-30 ปี	○ 31-35 ปี
○ 36-40 ปี	○ 41-45 ปี	○ 46-50 ปี	○ 51-55 ปี
○ 56-60 ปี	○ มากกว่า 60 ปี		

สาขาวิชาที่ท่านสังกัดอยู่:	
○ บัญชี	○ การเงิน
○ การตลาด	○ การจัดการเทคโนโลยีสารสนเทศ
○ การพาณิชยนาวี	○ การจัดการโรงแรม
○ การบริหารทรัพยากรมนุษย์ ---บริหารธุรกิจ	○ การบริหารทรัพยากรมนุษย์ ---รัฐประศาสนศาสตร์
○ การบริหารและการปกครองท้องถิ่น	○ นโยบายสาธารณะ
○ อื่นๆ โปรดระบุ	

ท่านทำงานสอนมาเป็นเวลานานกี่ปีแล้ว:		
○ 1-5 ปี	○ 6-10 ปี	○ 11-15 ปี
○ 16-20 ปี	○ 21-25 ปี	○ มากกว่า 25 ปี
ท่านทำงานสอนที่คณะวิทยาการจัดการมาเป็นเวลานานกี่ปีแล้ว:		
○ 1-5 ปี	○ 6-10 ปี	○ 11-15 ปี
○ 16-20 ปี	○ 21-25 ปี	○ มากกว่า 25 ปี
การศึกษาสูงสุดของท่าน:		
○ ปริญญาตรี	○ ปริญญาโท	○ ปริญญาเอก
○ อื่นๆ โปรดระบุ		
ท่านจบการศึกษาจากที่ใด:		
○ ประเทศไทย	○ ประเทศอื่นในแถบเอเชีย	
○ ยุโรป	○ อเมริกาเหนือ	

คำแนะนำ

ค่าถามมีทั้งหมด 25 ข้อ แต่ละข้อมีตัวเลือกที่เรียงลำดับบนเส้นวงกลมตั้งแต่ลำดับที่ 1 - 8
ก่อนที่จะเลือกแต่ละลำดับข้อกรุณาอ่านข้อความทั้งหมดให้ชัดเจน
หลังจากนั้นให้กาหมายเลขที่ท่านคิดว่ามีความสอดคล้องกับสถานศึกษาของท่านมากที่สุดบนวงกลมในแต่ละข้อ

ไม่มีตัวเลือกใดที่ดีหรือไม่ดี เช่น หมายเลข 1-8 บนเส้นบอกถึงความต่างกันสูงสุดของแต่ละขั้ว ระหว่างหมายเลข 2-7 บอกถึงความมากน้อยบนมาตรวัดที่ต่อเนื่องกันเรียงตามลำดับจากน้อยไปมากที่มีความเชื่อมโยงของทั้งสองขั้ว:

ตัวอย่าง

ในสถานศึกษาของข้าพเจ้ามีการดื่มกาแฟที่ ไม่มีความเข้มข้น (1).....การดื่มกาแฟที่มีความเข้มข้นมาก (8)
ความเข้มข้นของกาแฟบ่งบอกถึงระหว่างหมายเลข 1 - 8 แต่อย่างไรก็ตามไม่มีค่าตอบใดดีกว่าอีกค่าตอบหนึ่ง

การพิจารณาคำตอบแบบกรอบ

1. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีโครงสร้างอำนาจดังต่อไปนี้:

กระจายอำนาจ/ไม่มีระดับชั้น	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	รวมอำนาจ/มีระดับชั้น

2. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ข้าพเจ้ามีบทบาทดังนี้ :

ไม่มีคำบรรยายลักษณะงานที่ชัดเจน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มีคำบรรยายลักษณะงานที่ชัดเจน

3. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกมี:

มีอำนาจในการเลือกตำราเรียน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีอำนาจในการเลือกตำราเรียน

4. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกแต่ละคนมี:

กำหนดเป้าหมายในการทำงานเองได้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	กำหนดเป้าหมายในการทำงานเองไม่ได้

5. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกแต่ละคนมี:

มีอำนาจในการกำหนดวิธีการ/กลยุทธ์ในการทำงานเองได้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีอำนาจในการกำหนดวิธีการ/กลยุทธ์ในการทำงานเองได้

6. ข้าพเจ้าชอบการสอนและการเรียนรู้ในบรรยากาศที่นักเรียนนักศึกษามีการ:

มีส่วนร่วม/มีความเป็นเจ้าของในการศึกษาของตนเอง	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่มีส่วนร่วม/ไม่มีความเป็นเจ้าของในการศึกษาของตนเอง

7. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ผู้ปฏิบัติงานได้รับทรัพยากรทางการศึกษา (เช่น เทคโนโลยี, วัสดุ,อุปกรณ์, เครื่องมือ) โดย:

การเจรจาต่อรอง/การแข่งขันกันยื่นขอของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ผู้บริหารจัดสรรหาให้

8. ข้าพเจ้าชอบบรรยากาศในการเรียนการสอนที่เป็นแบบ:

เน้นความเป็นปัจเจกชน/ความเป็นส่วนตัวของนักเรียนนักศึกษาแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ไม่เน้นความเป็นปัจเจกชน/ความเป็นส่วนตัวของนักเรียนนักศึกษาแต่ละคน

9. ข้าพเจ้าได้รับแรงกระตุ้นจาก:

ภายใน/ความสนใจของตนเอง ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ภายนอก/ รางวัลหรือคำชมเชย

10. ข้าพเจ้าชอบบรรยากาศในการทำงานซึ่งการตัดสินใจในการจ้างงานเป็นแบบ:

กระจายอำนาจ / ถูกควบคุมโดยผู้ปฏิบัติงาน ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 รวมอำนาจ / ถูกควบคุมโดยผู้บริหาร

11. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ตารางการทำงานถูกกำหนดโดย:

การเจรจาต่อรองของแต่ละคน ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 กฎและระเบียบของสถาบัน

12. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีกฎกติกาและระเบียบการแบบ:

เล็กน้อย / คลุมเครือ ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 มากมาย / ชัดเจน

GROUP CONSIDERATIONS

1. ข้าพเจ้าชอบบรรยากาศในการทำงานที่องค์กรได้จัดทำกิจกรรม / วางแผนโดย:

แต่ละคนวางแผนเองโดยลำพัง ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ทั้งหมดร่วมมือกันวางแผน

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2. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สังคมและการทำงานเป็นแบบ:

แยกกันทำ ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ร่วมมือกันทำเป็นหนึ่งเดียว

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3. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีรางวัลและคำชมเชยที่ได้รับแก่:

เฉพาะแต่ละบุคคล ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ทุกคนในกลุ่ม

4. ข้าพเจ้าชอบบรรยากาศในการทำงานที่การเรียนการสอนถูกวางแผนไว้โดยอิง:

เป้าหมายและ ความสนใจของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	เป้าหมายและ ความสนใจของกลุ่ม

5. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีการประเมินผลการทำงานที่เป็นไปตาม:

เป้าหมายและกฎเกณฑ์ ของแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	เป้าหมายและกฎเกณฑ์ ของกลุ่ม

6. ข้าพเจ้าชอบบรรยากาศในการทำงานที่สมาชิกทำงานโดย:

แยกกันทำตามเป้าหมาย และวัตถุประสงค์ที่กำหนดไว้	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ทำงานร่วมกันตามเป้าหมาย และวัตถุประสงค์ที่กำหนดไว

7. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีหลักสูตรการเรียนการสอนแบบ:

กำหนดแนวทางโดยแต่ละคน	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ร่วมมือกันกำหนดแนวทาง

8. ข้าพเจ้าชอบบรรยากาศในการทำงานที่มีการสื่อสารโดย :

ผ่านตัวบุคคล, ไม่มีเครือข่ายเป็นทางการ	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ผ่านหมู่คณะ, มีเครือข่ายเป็นทางการ

9. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ทรัพยากรทางการศึกษา ถูกควบคุมหรือเป็นเจ้าของโดย:

แต่ละบุคคล	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ร่วมมือกัน

10. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ครูผู้สอนและนักเรียนมีลักษณะ:

ไม่มีความจงรักภักดี / ซื่อสัตย์ต่อสถานศึกษา	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	มีความจงรักภักดี / ซื่อสัตย์ต่อสถานศึกษามาก

11. ข้าพเจ้าชอบบรรยากาศในการทำงานที่ความรับผิดชอบของผู้ปฏิบัติงานและผู้บริหาร:

คลุมเครือ / ไม่มีความรับผิดชอบมาก	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	ชัดเจน / มีความรับผิดชอบมาก

12. ข้าพเจ้าชอบบรรยากาศในการทำงานที่การตัดสินในส่วนใหญ่เป็นแบบ:

ส่วนตัว แต่ละคนมีอิสระ ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 เห็นพ้องต้องกัน หรืออนุมัติจากกลุ่ม

13. โปรดระบุระดับความพอใจในการพัฒนาด้านวิชาชีพที่สถาบันจัดให้ :

มีความไม่พอใจมาก ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 มีความพอใจมาก

ถ้าท่านยินดีจะให้สัมภาษณ์เป็นเวลาประมาณ 15-30 นาที
กรุณาบอก e-mail หรือ เบอร์โทรศัพท์ เพื่อจะได้ติดต่อ นัดหมายเวลาสัมภาษณ์ได้:

ขอขอบคุณในการตอบแบบสอบถามนี้

Submit Form Reset Form

Appendix G

Consent Form to Interviewed Participants

English Version

CONSENT FORM

Project Title: A Grid and Group Explanation of Students' and Instructors' Preferences in CAI: A Case Study of University Classrooms in Thailand

Investigators: Aree Limwudhikraijirath, (Graduate student at Oklahoma State University)
B.Sc. (*Mathematics*), Chulalongkorn University (1980)
M.Sc. (*Applied Statistics*), Major Computer Science, National Institute Development Administration (1985)

Purpose: As an undergraduate student or as an instructor of the Faculty of Management Sciences, you are invited to participate in a research study being conducted at the Faculty of Management Sciences, Prince of Songkla University, Hatyai, Thailand. This study is designed to explain the learning culture of undergraduate students and teaching culture of instructors of the Faculty of Management Sciences as well as to explain the students' different preferences mode of CAI. The information sought will be your thoughts, preferences, perceptions, beliefs, values, feelings, and experiences about CAI.

Procedures: As an undergraduate student or as an instructor of the Faculty of Management Sciences, if you decide to participate, you will be asked to complete the demographic and 25-item questionnaire called 'Grid and Group Preference Tool'. The difference between the student's questionnaire and instructor's questionnaire is only detail in demographic part asked. Student may complete 'Grid and Group Preference Tool' for student, while instructor may complete 'Grid and Group Preference Tool' for instructor. It will take about 30 minutes to complete the questionnaire. You may also then be asked to get involved in an individual interview to discuss learning preference in CAI (for student) or teaching approaches (for instructor). The interview will be recorded, and transcribe later. Finally, you will be asked to provide materials from your class such as tests, exercises, quizzes and exam papers, virtual classroom and other artifacts. The information that will be gathered from these items will tell the truth about CAI practices in learning. The responses from the questionnaire and interview will in no way affect your regular learning or teaching.

Risks of Participation: There are no known risks associated with this study which are greater than those ordinarily encountered in daily life.

Benefits: The primary benefit to be expected is helping to comprehend why students prefer to learn the way they do and why instructors prefer to teach the way they do, and what the study reveals as to the appropriate mode of CAI for undergraduate students of the Faculty of Management

Science. It will be a base line for further development of an appropriate CAI for undergraduate students of the Faculty of Management Science.

Confidentiality: Any information that is obtained in connection with this study and that can be identified with you will remain confidential. The data will be stored in the researcher's personal computer which will be locked up where the researcher only has access. In written results, participants will be given a different identity to protect them from any personal information being disclosed. The audio and video recordings will be transcribed and keep in the confidential place that only I and my advisor can access them. After one year of the study all data in the audio and video recordings will be destroyed.

Compensation: There will be no any compensation for participation in this study.

Contacts: If you have any questions, I can be reached at 221/17 (PSU University Apartment No. 15 Room 4/1) Moo 3, Tambol Korhong, Hat Yai, Songkhla, 90112, Thailand, telephone number: 011-66-74284716, e-mail: aree.l@psu.ac.th or you may contact Prof. Ed Harris, Advisor, 308 Willard Hall, OSU, Stillwater, Oklahoma 74078, telephone number: 405-744-7932, e-mail: ed.harris@okstate.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, Oklahoma 74078, telephone number: 405-744-1676 or irb@okstate.edu.

Participant Rights: Participation is totally voluntary. Your decision whether or not to participate will not prejudice your future relation with Prince of Songkla University. Also, if you decide to participate, you are free to discontinue participation at any time without any reprisal, penalties, or consequences of any kind.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____ _____

Signature of Researcher Date

Appendix H

Consent Form to Interviewed Participants

Thai Version

01AreeThaiConsent

หนังสือให้ความยินยอมเพื่อที่จะเข้าร่วมงานวิจัยของมหาวิทยารัฐโอกลาโฮมา
ชื่องานวิจัย: การอธิบาย ความพึงพอใจ ของ นักศึกษา และ อาจารย์ ใน คอมพิวเตอร์ช่วยสอน โดยอาศัยแนวคิด กรอบ และ กลุ่ม: กรณีศึกษา ของ มหาวิทยาลัยในประเทศไทย

ผู้วิจัย: อารีย์ ลิ้มวุฒิไกรจิรัฐ (นักศึกษาปริญญาเอก มหาวิทยาลัยรัฐโอกลาโฮมา)
วท.บ. (คณิตศาสตร์) จุฬาลงกรณ์มหาวิทยาลัย (2523)
พบ.ม. สถิติประยุกต์ สาขา คอมพิวเตอร์ สถาบันบัณฑิตพัฒนบริหารศาสตร์ (2528)

วัตถุประสงค์: ในฐานะที่เป็นนักศึกษา หรือ อาจารย์ ของ คณะวิทยาการจัดการ คุณได้รับคำเชิญเพื่อร่วมให้ข้อมูลในงานวิจัยชิ้นนี้ ซึ่งทำการศึกษาที่ คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์ หาดใหญ่ สงขลา ประเทศไทย การศึกษานี้ ได้ถูกออกแบบมาเพื่ออธิบาย วัฒนธรรมการเรียนรู้ ของ นักศึกษาระดับปริญญาตรี และ วัฒนธรรมการสอน ของ อาจารย์ ของ คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์ นอกจากนั้น ยัง อธิบาย ความพึงพอใจของนักศึกษา ในรูปแบบที่แตกต่างกันของคอมพิวเตอร์ช่วยสอน สารสนเทศ ที่ ต้องการทราบคือ ความคิด ความพึงพอใจ การรับรู้ ความเชื่อ คุณค่า ความรู้สึก และ ประสบการณ์ ของท่าน อันเกี่ยวกับ คอมพิวเตอร์ช่วยสอน

ขั้นตอนการวิจัย: ในฐานะที่เป็นนักศึกษา หรือ อาจารย์ ของ คณะวิทยาการจัดการ ถ้าท่านตัดสินใจที่จะร่วมให้ข้อมูล ท่านจะ ถูกขอร้องให้ตอบข้อมูลส่วนตัวทั่วๆไป และ แบบสอบถาม 25 ข้อคำถาม ซึ่งเรียกว่า “เครื่องมือวัดความพึงพอใจ โดยแนวความคิด กรอบ และ กลุ่ม” โดยที่ ความแตกต่าง ของ แบบสอบถาม ของ นักศึกษา และ อาจารย์ อยู่ที่ข้อมูลส่วนตัวทั่วๆไป ในส่วนแรก เท่านั้น สำหรับ 25 ข้อคำถาม ซึ่งเรียกว่า “เครื่องมือวัดความพึงพอใจ โดยแนวความคิด กรอบ และ กลุ่ม” ของทั้งนักศึกษา และ อาจารย์ จะเหมือนกัน นักศึกษาจะตอบแบบสอบถาม “เครื่องมือวัดความพึงพอใจ โดยแนวความคิด กรอบ และ กลุ่ม” ของนักศึกษา อาจารย์จะตอบแบบสอบถาม “เครื่องมือวัดความพึงพอใจ โดยแนวความคิด กรอบ และ กลุ่ม” ของอาจารย์ การตอบแบบสอบถาม จะใช้เวลาประมาณ 30 นาที หลังจากการตอบแบบสอบถามไปเป็นระยะเวลาหนึ่ง

ผู้วิจัยอาจจะขอสัมภาษณ์ท่าน เพื่อขอข้อมูลจากนักศึกษา
เกี่ยวกับความพึงพอใจในการเรียนโดยใช้คอมพิวเตอร์ช่วยสอน และขอข้อมูล
เกี่ยวกับรูปแบบ การสอนจากอาจารย์ การสัมภาษณ์
จะถูกบันทึกเสียงเพื่อตรวจสอบความครบถ้วนของข้อมูล และ
เก็บไว้ในรูปแบบข้อความ ในเวลาต่อมา นอกจากนี้
ท่านอาจจะถูกขอเอกสารต่างๆ อันเกี่ยวกับกานสอนของท่าน เช่น แบบทดสอบ
แบบฝึกหัด แบบทดสอบย่อย และ ข้อสอบ เอกสาร เกี่ยวกับ ห้องเรียนเสมือน
และ เอกสารอื่นๆ สารสนเทศต่างๆที่ไดมานี้ จะบอกความจริงเกี่ยวกับ
การใช้คอมพิวเตอร์ช่วยสอน ในการเรียนรู้ การตอบแบบสอบถาม และ/หรือ
การให้สัมภาษณ์ เป็นความสมัครใจของท่าน และจะไม่มีผลกระทบใดๆ
ต่อการเรียน หรือ การสอนโดยปรกติของท่าน

ความเสี่ยงในการเข้าร่วมงานวิจัย:
ไม่ความเสี่ยงใดๆที่เกี่ยวข้องกับการศึกษาครั้งนี้
หากเมื่อพิจารณาถึงความเป็นไปได้ และความรุนแรง
ในการเกิดความเสี่ยงในเรื่องความเครียด ด้านจิตใจ ด้านสังคม
ด้านร่างกายหรือ ด้านกฎหมาย
การเข้าร่วมในงานวิจัยครั้งนี้ไม่ก่อให้เกิดความเสี่ยงมากไปกว่าเรื่องราวต่างๆ
ที่ท่านประสบในชีวิตประจำวัน อย่างไรก็ตามหากท่านเริ่มมีความรู้สึกอึดอัด
หรือเครียดกับงานวิจัยครั้งนี้ ท่านสามารถยกเลิกการเข้าร่วมได้ทุกเวลา

ประโยชน์ของการศึกษานี้: ประโยชน์เบื้องต้นที่ถูกคาดหวังไว้
คือช่วยให้เข้าใจนักศึกษาว่าทำไมจึงจึงพึงพอใจที่จะศึกษาในรูปแบบที่เขาพอ
ใจ และเข้าใจอาจารย์ว่าทำไมจึงพึงพอใจที่จะสอนในรูปแบบที่เขาพอใจ
นอกจากนี้ การศึกษานี้จะเผยให้ทราบถึงรูปแบบที่เหมาะสม
ของคอมพิวเตอร์ช่วยสอน สำหรับนักศึกษาปริญญาตรี
ของคณะวิทยาการจัดการ

การเก็บรักษาข้อมูล:
ข้อมูลใดๆที่ได้รับอันเกี่ยวกับการศึกษานี้จะไม่มีข้อมูลที่สามารถระบุท่านได้
ข้อมูลที่เกี่ยวกับท่านจะเก็บไว้เป็นความลับ
ข้อมูลจะถูกเก็บไว้ในคอมพิวเตอร์ส่วนตัวของผู้วิจัย
ซึ่งมีเฉพาะผู้วิจัยที่จะเข้าถึงข้อมูลนั้นได้ ในการนำเสนอผลที่ได้จากการศึกษา
ผู้มีส่วนร่วมในการให้ข้อมูลจะถูกให้ชื่อใหม่ที่แตกต่างกันเพื่อป้องกันเขาจากก
ารเปิดเผยข้อมูล ไม่ให้ผู้อื่นทราบได้ว่าใครเป็นผู้ให้ข้อมูลส่วนไหน

01AreeThaiConsent

การบันทึกเสียงจะใช้รหัส ไม่มีการใส่ชื่อ
ข้อมูลดิบที่เก็บบันทึกไว้จะเก็บไว้อย่างปลอดภัย
เฉพาะผู้วิจัยและอาจารย์ที่ปรึกษาที่สามารถเปิดดูข้อมูลได้
ข้อมูลจะเก็บไว้หนึ่งปีหลังจากการศึกษา หลังจากนั้นจะถูกทำลาย

การให้สิ่งตอบแทน:
ไม่มีการให้สิ่งตอบแทนใดๆในการมีส่วนร่วมในการให้ข้อมูลในการศึกษานี้

การติดต่อ:
ท่านสามารถติดต่อผู้วิจัยได้ที่ที่อยู่และหมายเลขโทรศัพท์ต่อไปนี้
และหากท่านต้องการจะสอบถามเรื่องความร่วมมือในการศึกษาครั้งนี้
และ/หรือต้องการข้อมูลเกี่ยวกับผลการศึกษา ท่านสามารถติดต่อได้ที่ อ. อารีย์ ลิ้มวุฒิไกรจิรัฐ อีเมล์ aree.l@psu.ac.th หรือ aree.limwudhikraijira@okstate.edu หรือ ที่เบอร์โทรศัพท์ (074) 284716 หรือ (074) 287899 หรือติดต่อ Prof. Dr. Ed Harris, 308 Willard Hall, Oklahoma State University, Stillwater, OK 74078, โทรศัพท์ 405-744-7932 อีเมล์ed.harris@okstate.edu
หากคุณสงสัยเกี่ยวกับสิทธิในฐานะเป็นอาสาสมัครในการศึกษาครั้งนี้
ท่านสามารถติดต่อ Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 หรือ irb@okstate.edu

สิทธิ์ของผู้เข้าร่วมงานวิจัย: การเข้าร่วมงานวิจัยเป็นความสมัครใจ
ไม่มีการลงโทษสำหรับการปฏิเสธที่จะเข้าร่วมในงานวิจัยครั้งนี้และท่านสามารถที่จะถอนตัวตัวออกจากงานวิจัยได้ทุกเวลาโดยไม่มีการลงโทษใดๆ

เอกสารให้ความยินยอม:
ข้าพเจ้าได้รับทราบเกี่ยวกับกระบวนการในงานวิจัยที่มีการแจกแจงอย่างถ่องแท้ ข้าพเจ้าทราบว่าข้าพเจ้าจะถูกถามให้กระทำ
และทราบถึงประโยชน์ต่างๆในการเข้าร่วม นอกจากนี้ข้าพเจ้าเข้าใจประโยคข้างล่างเหล่านี้

ข้าพเจ้าขอยืนยันว่าข้าพเจ้าอายุสิบแปดปี หรือ มากกว่า

ข้าพเจ้าได้อ่านและเข้าใจหนังสือให้ความยินยอมอย่างถ่องแท้
ข้าพเจ้าลงลายมือชื่ออย่างอิสระและสมัครใจ

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ข้าพเจ้าจะได้รับสำเนาของแบบฟอร์มนี้
ข้าพเจ้าในที่นี่ได้ยินยอมในการเข้าร่วมในการศึกษาครั้งนี้

_____ _____
ลายเซ็นของผู้เข้าร่วม วันที่

ข้าพเจ้าขอรับรองว่าข้าพเจ้าได้อธิบายเอกสารนี้ให้แก่ผู้เข้าร่วมงานวิจัยก่อนที่ผู้เข้าร่วมงานวิจัยลงลายมือชื่อ

_____ _____
ลายเซ็นผู้วิจัย วันที่

Appendix I

Sample Questions for Interview

SAMPLE QUESTIONS FOR INTERVIEW

Questions for students

1. Please describe your major study?
2. Why are you in this major?
3. What do you do with computer in general?
4. Please explain your definition of computer aided instruction?
5. Please explain your experience using computer aided instruction? (If they talk about whether the experience was good or bad: Why was it a good experience? Why was it a bad experience?)
6. What kinds of computer aided instruction you like most? Why? Least like? Why?
7. Please explain characteristics of effective computer aided instruction?
8. What subject matter is your in-need computer aided instruction? Why?
9. Do you have any other comments or suggestions about computer aided instruction?

VITA

Aree Limwudhikraijirath

Candidate for the Degree of

Doctor of Education

Dissertation: A GRID AND GROUP EXPLANATION OF STUDENTS' AND INSTRUCTOR' PREFERENCES IN COMPUTER ASSISTED INSTRUCTION: A CASE STUDY OF UNIVERSITY CLASSROOMS IN THAILAND

Major Field: Applied Educational Studies/College Interdisciplinary

Biographical:

Personal Data: Born in Chawang, Nakhon Sri Thammarat, Thailand.

Education: Graduated from Trium Udom Suksa School, Phayathai, Bangkok, Thailand in 1975; received Bachelor of Science in Mathematics from Chulalongkorn University, Bangkok, Thailand in 1980. Received Master of Science in Applied Statistics, major Computer Science from National Institute Development Administration, Bangkok, Thailand in 1985. Completed the requirements for the Doctor of Education in Applied Educational Studies/College Interdisciplinary at Oklahoma State University, Stillwater, Oklahoma in July, 2009.

Experience: Government officer teacher of mathematics, Nakhon Sri Thammarat Technical College, Nakhon Sri Thammarat, Thailand, 1980-1990. Government officer teacher of statistics and computer, Faculty of Management Sciences, Prince of Songkla University, Hatyai, Songkhla, Thailand, 1990-present. Major head of Information Technology Management, Faculty of Management Sciences, Prince of Songkla University.

Professional Memberships: The Computer Association of Thailand under the Royal Patronage of His Majesty the King.

Name: Aree Limwudhikraijirath Date of Degree: July, 2009

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: A GRID AND GROUP EXPLANATION OF STUDENTS' AND INSTRUCTORS' PREFERENCES IN COMPUTER ASSISTED INSTRUCTION: A CASE STUDY OF UNIVERSITY CLASSROOMS IN THAILAND

Pages in Study: 200 Candidate for the Degree of Doctor of Education

Major Field: Applied Educational Studies/College Interdisciplinary

Scope and Method of Study: This study was a case study which had three overlapping purposes. The first purpose was to use Douglas's typology to explain the educational culture of the Faculty of Management Sciences (FMS) at Prince of Songkla University (PSU) Hatyai, Songkhla, Thailand. The second purpose was to describe the students' and instructor's preferences about computer assisted instruction (CAI) in FMS. The last purpose was to describe CAI practices in FMS. The participants in this case study included students and instructors of FMS. Participants completed a questionnaire called the Grid and Group Cultural Preference Tool. The results from the tool aligned each participant with the corresponding quadrant of their own cultural context. Participants in the interview stage were selected because of their different cultural contexts. Data were triangulated by multiple sources: questionnaire responses, interview transcripts, classroom observations and observation field notes, as well as documents.

Findings and Conclusions: Findings in this study indicated that there were some similarities in the cultures of FMS students and FMS instructors, and some differences in their practices and preferences in CAI. Both FMS students and instructors were collectivist (low grid, high group). For instructors, work comes first. For some students, they worked and played computer games at the same time. Age may be the crucial factor of the level of their responsibility. FMS indicated a compromised low-grid environment. It exhibited strong influences from history and tradition and had excellent linkages with its communities. The findings also showed the modes of CAI that students and instructors liked most and liked least. If the FMS administrators have to choose only one mode to provide CAI for students, it should be simulation which fits with the collectivist cultural context. However, there were many suitable criteria for selecting mode of CAI. It depends on subject which was taught too. Douglas is useful in explaining behaviors in a cultural context. However, actions and behaviors are not determined only by the culture. There are other factors such as personality and family background that help shape behavior, but Douglas is helpful in offering cultural language to explain those actions and behaviors.

ADVISER'S APPROVAL: Dr. Edward Harris