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Psychological Sense of Community in On-Line Learning Environments

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PSYCHOLOGICAL SENSE OF COMMUNITY IN ON-LINE LEARNING ENVIRONMENTS

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Thomas Chris Laughner

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PSYCHOLOGICAL SENSE OF COMMUNITY

IN ON-LINE LEARNING ENVIRONMENTS

by

Thomas Chris Laughner

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ABSTRACT OF GRADUATE STUDENT RESEARCH

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Problem

Current literature discusses differences among populations as they relate to face-to-face learning communities. However, no literature exists to determine if these same differences exist in an on-line learning environment. Since community has been closely linked to social and academic integration and success, additional research on whether populations with certain demographics feel the same absence of a sense of community in an on-line environment must be addressed. This study examines differences in psychological sense of community among students based on ethnicity, age, and sex.

Method

A revised Sense of Community Index was administered to students enrolled in at least one on-line course at three large universities. Demographic information, including ethnicity, age, and sex, was also collected. Matched-pair t-tests were used to determine differences in psychological sense of community (PSOC) between students' face-to-face and on-line courses. Logistic and multiple regressions were used to analyze differences in PSOC based on ethnicity, age, and sex. One thousand five hundred and nine students completed the survey.

Results

Nine of the 12 individual items on the Sense of Community Index (SCI) revealed a significant difference between on-line and face-to-face classes, with students indicating more agreement for face-to-face classes than on-line classes. There was significant difference in three of the four components (membership, influence, and shared emotional connection), again with students indicating more agreement with issues related to community in face-to-face classes. There were no significant differences between the two modes of taking classes in regard to integration and fulfillment of needs.

Finally, overall psychological sense of community in face-to-face classes was significantly higher than PSOC for on-line classes.

The differences among student populations were mixed. Older students appear to have the strongest sense of community in on-line classes. Although their total PSOC was lower than their younger classmates in face-to-face classes, it was higher in on-line classes. There was no difference in overall PSOC between Whites and minorities.

Finally, females tended to report a higher PSOC than males in both face-to-face and on-line classes.

Conclusions

While there appear to be some differences among populations with regard to psychological sense of community in their on-line courses, it is not evident why these differences occur. Overall, students enrolled in on-line courses have a much lower sense of community than students in face-to-face courses.

CHAPTER 1

INTRODUCTION

For decades, university administrators have sought ways to offer courses to students unable to attend classes on campus. In its infancy, the mode of instruction was the correspondence course, whereby postal mail was employed to shuttle course materials back and forth between teacher and student. Later, videotapes, closed circuit television, and cable broadcasts became the primary modes of instruction (Dewey, 1990; Olson, 2001).

With the advent of the Internet and the World Wide Web, university administrators and professors began taking advantage of the new technologies to reach students. In a survey of administrators, a majority (81%) felt that distance education was important to the mission of the university. In fact, the same study indicated administrators believed that distance education was essential to the survival of their institutions (Kambutu, 2002).

After the development of course management systems such as Blackboard and WebCT, dozens of schools began offering their distance education programs via the Internet. University administrators felt they could offer large class sections without the limits of expensive physical classroom space. Because so many students could be enrolled in a single section, administrators expected the institutions would generate

significant profit (Carr, 2001). Administrators soon determined that the model of placing as many students as possible into a single section of a class had limited success. Although not much research has been done, anecdotal evidence indicated dropout rates were higher in distance courses than in traditional face-to-face courses (Carr, 2000; Roach, 2002). Retention rates tended to be 10-20% lower in distance education courses than in traditional on-campus courses (Carr, 2000).

Substantial research has been undertaken to explain issues related to student persistence on campus and in distance education courses (Bean & Metzner, 1985; Pascarella & Terenzini, 1991; V. Tinto, 1993). Alfred Workman and Stenard (1996) describe five components related to student persistence on campus. One of the items is "social integration." Social integration is defined as the need for students to develop interpersonal relationships with peers, faculty, and staff (Rovai, 2002). Kember (1989; 1994) includes social as well as academic integration in his model for improving student retention in distance education courses.

Describing Distance Education

Distance education is a system and a process for providing instruction at a distance from an institution's campus. There are two aspects of distance education: distance teaching, the teacher's role in the process; and distance learning, the student's role in the process (Lane, 1992; Verduin & Clark, 1991; Willis, 1993). Keegan (1980) identifies six components of distance education. As this article was written prior to the advent of the personal computer and the World Wide Web, it focused on the category of distance education we now call "correspondence courses." However, the components are very similar. They are:

1. The separation of teacher and learner, which distinguishes it from face-to-face lecturing

2. The influence of an educational organization, which distinguishes it from private study

3. The use of technical media, usually print, to unite teacher and learner and carry the educational content

4. The provision of two-way communication so that the student may benefit from or even initiate dialog

5. The possibility of occasional meetings for both didactic and socialization purposes

6. The participation in an industrialized form of education that, if accepted, contains the genus of radical separation of distance education from other forms.

Distance learners generally have several distinct characteristics vis-à-vis traditional learners. Distance learners are usually part-time students, older, and for the most part are not geographically near the campus from which they are taking classes (Keegan, 1980). Further, distance learners often have more obligations such as families, jobs, and other activities (Carr, 2000).

Defining Community

Etzioni (1996) defines community as a combination of two elements:

> A) A web of affect-laden relationships among a group of individuals, relationships that often crisscross and reinforce one another (rather than merely one-on-one or chainlike individual relationships). B) A measure of commitment to a set of shared values, norms, and meanings, and a shared history and identity-in short, to a particular culture. (p. 127)

Etzioni's definition borrows elements from two concepts developed by Ferdinand Tönnies in 1887 (1940). Tönnies wrote of *gemeinschaft* (personal-sharing oriented) and *gesellschaft* (rule-oriented, contract-bound) as two forms of community (Craig, 1993). *Gemeinschaft* is a community where individuals have limited access to leave, but every individual's views are taken into account in community decisions. *Gesellschaft*, on the other hand, means that individuals have complete freedom to leave and the individual's vote depends on his economic activity (Segalman, 1976).

Another well-known work on the issue of community (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985) defines community as

> a group of people who are socially interdependent, who participate together in discussion and decision making, and who share certain practices (which see) that both define the community and are nurtured by it. Such a community is not quickly formed. It almost always has a history and so is also a community of memory, defined in part by its past and its memory of its past. (p. 72)

Research demonstrates that a model for successful learning involves creating communities of learners. Riel and Fulton (2001) state that learning communities share

> a way of knowing, a set of practices, and the shared value of the knowledge that these procedures generate. There are ways for novices and experts to work in the same system to accomplish similar goals. Community members are recognized for what they know as well as what they need to learn. . . .Cooperation rather than competition is stressed. (p. 519)

Some studies have linked Tönnies's concepts of *gemeinschaft* and *gesellschaft* to analyze this concept (Craig, 1993; Furman, 2002; Sergiovanni, 1993).

Even more important than whether a community is created is whether individuals feel that they are part of a community (McMillan & Chavis, 1986; Scherer, 1987). McMillan and Chavis (1986) describe four components essential for an individual to feel a psychological sense of community. They are membership, influence, integration and

fulfillment of needs, and a shared emotional connection. They define a sense of community as a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through commitment to be together.

Sense of Community and Race, Age, and Gender

Research has been conducted to determine whether there are differences among populations in sense of community and alienation as they relate to race, age, and gender. Allen (1980) reported that young African-Americans are more alienated from society than older African-Americans. Steitz and Kulpa (1984) describe differences in alienation between men and women. They also report that alienation is more likely for older women while it is less likely for older men. Conversely, Hays and DiMatteo (1985) found that males are significantly lonelier than females.

In an academic setting, there have also been differences noted between populations. In a study of African-American students at a predominantly White college campus, Robinson-Armstrong (1998) found that the 10 subjects did not feel a strong affiliation in their community. Dias (1993) explored alienation on two college campuses and reported that African-Americans tended to be more alienated on a predominantly White campus than similar students on the campus of a historically Black college.

Age also affects the level of alienation from a campus community. Maxham-Kastrinos (1998) suggests older students feel alienated on college campuses whose services are geared towards younger students. Age was also a factor in community alienation in a study examining the difficulty in returning to school (Harris, 1987).

There is some evidence that the sex of the student has an affect on the level of community alienation felt by students, although it is not clear why that is the case. McGowan (1988) found that sex of the student influenced student scores on an instrument designed to measure student adaptation to college.

Statement of the Problem

While the current literature discusses differences among populations as they relate to face-to-face communities, no literature exists to determine if these same differences exist in an on-line environment. Since community has been closely linked to social and academic integration and success, additional research on whether populations with certain demographics feel the same absence of a sense of community in an on-line environment must be addressed.

Purpose of the Study

The purpose of this study was twofold. First, this study examined if there are differences in psychological sense of community between students in their on-line and face-to-face classes. Second, this study examined relationships between students' perceptions of community membership and selected personal variables (age, gender, ethnicity).

Research Questions

1. Do students perceive the same psychological sense of community in their on-line courses as they do in their face-to-face courses?

2. Does a sense of community among on-line students vary according to personal variables?

Research Hypotheses

Research question 1 asked: Do students perceive the same psychological sense of community in their on-line courses as they do in their face-to-face courses? The answer to this question was explored by testing the following research hypothesis.

Hypothesis: Psychological sense of community is the same in on-line and traditional classes.

Research question 2 asked: Does a sense of community among on-line students vary according to personal variables? The answer to this question was explored by testing three research hypotheses.

Hypothesis 1: There is no significant difference between traditional age college students and older college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

Hypotheses 2: There is no significant difference between male and female college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

Hypothesis 3: There is no significant difference between White college students and minority[1] college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

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[1] Originally attempting to compare each of the ethnic groups individually, the returned results provided insufficient participants in each group to provide statistical significance. Therefore, groups with lower numbers (minorities) were analyzed together in a single category to compare with the majority of students (White).

Significance of the Study

As more students choose to pursue their degrees on-line, special attention must be paid to their needs. The results of this study will help inform administrators and faculty with oversight of courses taught at a distance whether special attention should be given to how specific populations are brought into their learning communities.

Delimitations

Because most literature related to the importance of community with respect to student retention is geared towards undergraduates, this study was limited to students pursuing bachelor's degrees. It included students pursuing degrees completely on-line and students fulfilling a portion of their requirements on-line.

This study did not examine sense of community in individual courses. Because significant study has not been done in this area, it was important to first examine sense of community in a broader context. Therefore, this study examined students' overall sense of community as it relates to all of their academic courses. Activities that take place in individual courses that may lead to a sense of community may be an area for additional research. In addition, issues related to activities that take place outside of the classroom (dorm life, clubs, and organizations) were not included in this study.

Theoretical Framework

While the McMillan and Chavis (1986) definition provides four clear components of a community (membership, influence, integration and fulfillment of needs, and shared emotional connection), their definition focuses clearly on the individual's sense of community, rather than whether a community has indeed been created. Using McMillan

and Chavis's definition as a basis, a model of community can be illustrated (see Figure 1). Seemingly, each component can move towards the center of the circle, or out towards the outer edge. A community might be created when each of the four components stays centered. Conceivably, if the behavior by members of the group forces the components towards the outside, then the circle may become off balance and community becomes forsaken in favor of isolationism.

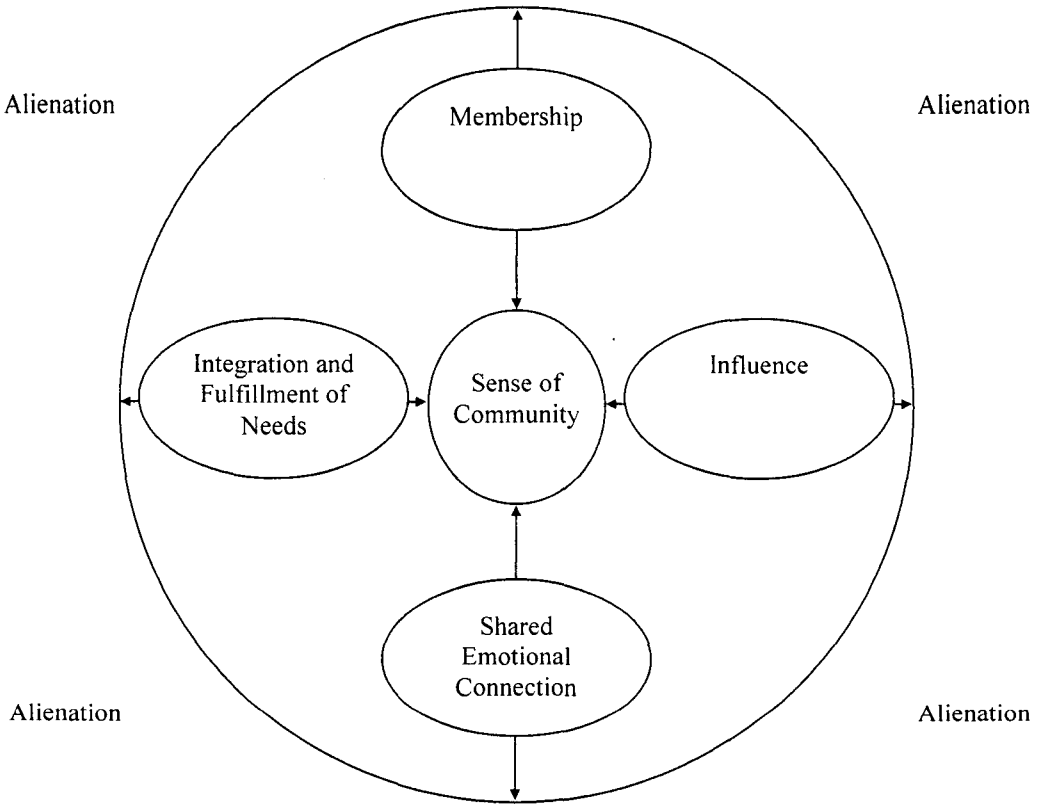

Fig. 1. Model of community adapted from McMillan & Chavis's Psychological Sense of Community.

While these perspectives of community are highly regarded, it is not clear as to the applicability to an on-line environment. In addition, while it has been shown that factors such as race, gender, and age affect one's connection with the local community (Allen, 1980; Hays & DiMatteo, 1985; Steitz & Kulpa, 1984), it is not known that these factors affect the virtual community. It may be the case that the relative anonymity in an on-line environment where factors such as age, ethnicity, and sex are not seen by other students helps to decrease isolation.

Organization of the Study

Chapter 2 provides a review of the literature related to community, psychological sense of community, and distance education.

Chapter 3 describes the methodology that was used to conduct the study, including a list of universities whose students participated in the study.

Chapter 4 analyzes the data collected during the study and draws some conclusions about the data's significance.

Chapter 5 summarizes the study and provides suggestions for future research.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The relationship between community and education has a long history, most notably in the early part of the 20th century through the works of John Dewey. Although focused on primary education, Dewey's writings emphasize the importance of interpersonal relationships in the learning process. Others, including Tönnies (1940) and Putnam (2000), have written extensively on the importance of community outside of education.

In recent years, educators have renewed their interest in how community affects learning (Furman, 2002). As community is emphasized less and less outside of academia, it becomes more important within the school. Sergiovanni (1993) argues that relationships become the core focus in schools when they are thought of as communities. Research on the subject indicates that when community is established in the classroom, retention increases (Vincent Tinto & Goodsell-Love, 1993) and students' social and academic skills improve (Bateman, 1998).

A review of the literature provides a background for the research that has been done to examine the components of a community, how community is being used in on-line learning environments, and how factors such as ethnicity, age, and gender impact one's sense of community in distance education. McMillan and Chavis's (1986) work on

psychological sense of community provides the theoretical framework for the examination of these relationships.

This chapter provides an overview of a community, including characteristics of community. It discusses psychological sense of community (PSOC) and its four components (membership, influence, integration and fulfillment of needs, and shared emotional connection). The chapter also describes the relationship between community and academia, with a description of learning communities. It explores the relationship between community and issues related to race, age, and gender. Finally, it reviews issues related to distance education, characteristics of distance learners, and the relationship between sense of community and distance learning.

Community Explored

While Dewey is most known for his belief in the importance of community in the school and how the creation of such community improves teaching and learning, there are many individuals who have written about community.

Most noteworthy among those who have written about community is the work of Ferdinand Tönnies. Tönnies speaks of *gemeinschaft* (personal-sharing oriented) and *gesellschaft* (rule-oriented, contract-bound) as two forms of community (Craig, 1993). *Gemeinschaft* is a community where individuals have limited access to leave, but every individual's views are taken into account in community decisions. *Gesellschaft*, on the other hand, means that individuals have complete freedom to leave the community and the individual's vote depends on his economic activity (Segalman, 1976). As our society has changed, especially in the past 40 years, the United States has become less a community based on *gemeinschaft* while increasingly exhibiting the characteristics of

gesellschaft. These changes are likely due to the pressures of time and money, mobility and sprawl, and technology and mass media (Putnam, 2000).

Characteristics of Community

There are many definitions of community (Bellah et al., 1985; Etzioni, 1996; Putnam, 2000; Ratcliff, 1978; Rheingold, 2000; Rubin, 1983). While there are differences among the various definitions, there are common themes among each:

1. Members of a community are interdependent.
2. Members of a community share values and norms.
3. Members of a community have a shared history and common tasks.

Interdependence

Each community definition describes a group of interdependent individuals. For example, Bellah et al. (1985) refer to a community as a group of socially interdependent people. Etzioni (1996) adds that a group of individuals develops a "web of affect-laden relationships among a group of individuals, relationships that often crisscross and reinforce one another (rather than merely one-on-one or chainlike individual relationships)" (p. 127).

Values and Norms

A second common element of community is that the members in the community share common values or norms. Etzioni's (1996) definition suggests that members have a "measure of commitment to a set of shared values, norms, and meanings, and a shared history and identity – in short, to a particular culture" (p. 127). Bellah et al. (1985) maintain that a community "shares certain practices that both define the community and

are nurtured by it" (p. 72). Etzioni (2000) adds that inequality among members of a community is greatly reduced.

Shared History and Tasks

Finally, a community participates together to perform a common goal. Bellah et al. (1985) describe a community where people participate together in discussion and decision-making. Such a community is not quickly formed. It almost always has a history and so is also a community of memory, defined in part by its past and its memory of its past.

Psychological Sense of Community (PSOC)

Some scholars have maintained that even more important than what comprises a community is whether individuals sense that they are part of a community. McMillan and Chavis (1986) describe four factors that determine whether an individual has a psychological sense of community. They are membership, influence, integration and fulfillment of needs, and a shared emotional connection. They define a sense of community as a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through commitment to be together.

There are four components that an individual must sense in order to develop a psychological sense of community (PSOC).

Membership

McMillan and Chavis (1986) describe membership as an investment that one makes to belong to a community. It is a feeling of belonging. There are five components to membership:

1. Boundaries – The sense that not only is an individual a member of a group, but that there are others who are not able to participate in the group. For example, a university community consists of people who have been admitted to attend the school. A student at the university senses, and possibly even promotes, the idea that those who are not students at the university cannot be part of that community.

2. Emotional safety – The creation of boundaries creates group cohesion, and therefore provides a sense of security.

3. Sense of belonging and identification – The state when an individual takes ownership of a group, possibly indicated by statements such as "It is my group" or "I am part of this group." This is usually at a stage where the individual feels accepted by the other members in the group and is in turn willing to "sacrifice" for the group.

4. Personal investment – When individuals have to work for membership in the group, they will have more of a feeling that they have earned a place in the group.

5. Common symbol system – The group's language, traditions, style of dress, or rites of passage serve to unify the members and contribute to the boundaries of the group. A school's alma mater, for example, may serve to create unity among students and/or alumni of the institution.

Influence

The notion of influence works two ways. On one hand, a member feels that he or she has the ability to influence the direction of the group. At the same time, though, in order for the group to function, members of the group must have influence over individuals, with expectations for certain actions or behaviors. There are four characteristics of influence:

1. Members are more attracted to a community in which they feel that they are influential.

2. There is a significant positive relationship between cohesiveness and a community's influence on its members to conform. Thus, both conformity and community influence on members indicate the strength of the bond.

3. The pressure for conformity and uniformity comes from the needs of the individual and the community for consensual validation. Thus, conformity serves as a force for closeness as well as an indicator of cohesiveness.

4. Influence of a member on the community and influence of the community on a member operate concurrently, and one might expect to see the force of both operating simultaneously in a tight-knit community (McMillan & Chavis, 1986).

Integration and Fulfillment of Needs

Integration and fulfillment of needs relates to the requirement that participants need to have rewarding experiences as part of their association with the group.

1. Reinforcement and need fulfillment is a primary function of a strong community.

2. Some of the rewards that are effective reinforcers of communities are status of membership, success of the community, and competence or capabilities of other members.

3. There are many other undocumented needs that communities fill, but individual values are the source of these needs. The extent to which individual values are shared among community members will determine the ability of a community to organize and prioritize its need-fulfillment activities.

4. A strong community is able to fit people together so that people meet others' needs while they meet their own.

Shared Emotional Connection

The interactions of individuals in a group create a shared history and connection to the group. The features of shared emotional connection are:

1. The more people interact, the more likely they are to become close.

2. The more positive the experience and the relationships, the greater the bond. Success facilitates cohesion.

3. If the interaction is ambiguous and the community's tasks are left unresolved, group cohesiveness will be inhibited.

4. The more important the shared event is to those involved, the greater the community bond.

5. The amount of interpersonal emotional risk one takes with the other members and the extent to which one opens oneself to emotional pain from the community life will affect one's general sense of community.

6. Reward or humiliation in the presence of community has a significant impact on attractiveness (or adverseness) of the community to the person.

7. The final feature is "spiritual bond" which ties directly to Tönnies's use of *gemeinschaft*. This is an overall, unexplainable feeling of connection one has with other people. For example, individuals of a certain faith may feel a spiritual connection with a university simply because that institution is affiliated with the same denomination.

Importance of Sense of Community in Educational Settings

A growing body of research demonstrates that a model for successful learning involves creating communities of learners. Studies have linked Tönnies's concepts of *gemeinschaft* and *gesellschaft* to analyze this concept (Craig, 1993; Furman, 2002; Sergiovanni, 1993). Ernest Boyer's (1990) analysis of the importance of community on campus is the most respected documentation on the issue. He stresses that when campus community does not exist, students stray from their focus on academics. Boyer's model of campus community includes six components. He states that a college or university should be:

1. An educationally purposeful place where learning is the focus
2. An open place where civility is affirmed
3. A disciplined place where group obligations guide behavior
4. A caring place where individuals are supported and service is encouraged
5. A celebrative place where traditions are shared.

Since Boyer's book, significant work has been done to further define learning communities and to further describe the many components that should exist for the communities to be effective. Learning communities share

> a way of knowing, a set of practices, and the shared value of the knowledge that these procedures generate. There are ways for novices and experts to work in the same system to accomplish similar goals. Community members are recognized for what they know as well as what they need to learn. . . .Cooperation rather than competition is stressed. (Riel & Fulton, 2001, p. 519)

Humans have a basic need to be part of a community (Magolda, 2001). On a college campus, that community is communicated through uniform architecture and unique buildings. According to Heller (1989), community is locality. A second conceptualization of community, according to Heller, is human relationships.

Cibulka and Nakayama (2000) identify three components of a learning community. They are (a) student learning, (b) teacher learning, and (c) collaborative learning.

In addition, Larrivee (2000) suggests three components for a caring learning community. They are respect, thoughtfulness, and emotional integrity. Black (1996) exerts that learning communities need to be small in order to be effective. Rubin (1983) maintains that a community needs to be an intermediate size (not too large and not too small) but does not specify the ideal size. He maintains that a group must be small enough to give people a sense of community, and large enough to help them feel like they are part of the larger social structure.

A sizeable body of literature exists documenting the impact community has on students in an educational setting. Students with a sense of community experience higher success in persistence (Holmes, 2002) and in completing their education (Tucker, 1999), lower burnout (McCarthy, Pretty, & Catano, 1990), and a sense of identity and shared values (Palloff & Pratt, 1999).

There have been studies that make connections between PSOC and various components of the McMillan and Chavis model. There are findings that indicate a positive correlation between student participation and PSOC (Loomis, 2001; Schreiner, 1982). Molloy (1991) wrote that students who felt they had less ability to influence change at the university detracted from their sense of community.

Sense of Community and Race, Age, and Gender

Research has been done to determine whether there are differences among populations in sense of community and alienation as they relate to race, age, and gender. Allen (1980) reported that young Blacks are more alienated from society than older Blacks. Steitz and Kulpa (1984) describe differences in alienation between men and women. They report that older women are more likely to feel alienated from a community while it is less likely for older men. Conversely, Hays and DiMatteo (1985) found that males are significantly lonelier than females.

Connections have been made between a variety of student characteristics and the sense of community. Particular emphasis has been placed on the inter-relations between ethnicity and PSOC. Loomis (2001) found that increased participation in an urban university increased students' sense of community. More importantly, studies indicate that ethnicity (Phillips, 2002) or even students' interactions with majority or minority students on a college campus (Brown, 1994) can predict variation in students' PSOC.

In a study of African-American students at a predominantly White college campus, Robinson-Armstrong (1998) found that the subjects did not feel a strong affiliation in their community. Dias (1993) explored alienation on two college campuses

and reported that African-Americans tended to be more alienated on a predominantly White campus than similar students on the campus of a historically Black college.

In addition, there are relationships between PSOC and age (Maxham-Kastrinos, 1998; Steitz & Kulpa, 1984). Maxham-Kastrinos (1998) suggests older students feel alienated on college campuses whose services are geared towards younger students. Age was also a factor in community alienation in a study examining the difficulty in returning to school (Harris, 1987).

Finally, there is evidence that the sex of the student has an affect on the level of community alienation felt by students in face-to-face classes. Steitz and Kulpa (1984) found different levels of alienation between women and men. In addition, the authors found that age is a negative factor for women, but a positive one for men.

Defining Distance Education

Distance education is a system and a process for providing instruction at a distance. It involves distance teaching – the teacher's role in the process, and distance learning – the student's role in the process (Lane, 1992; Verduin & Clark, 1991; Willis, 1993). Keegan (1980) identifies six components of distance education. They are:

1. The separation of teacher and learner, which distinguishes it from face-to-face lecturing
2. The influence of an educational organization, which distinguishes it from private study

3. The use of technical media, usually print[2] to unite teacher and learner and carry the educational content

4. The provision of two-way communication so that the student may benefit from or even initiate dialog

5. The possibility of occasional meetings for both didactic and socialization purposes

6. The participation in an industrialized form of education that, if accepted, contains the genus of radical separation of distance education from other forms.

The California Distance Learning Project (Porter, 1997) modifies the definition of distance education slightly:

1. The separation of teacher and learner during at least a majority of each instructional process

2. The use of educational media to unite teacher and learner and carry course content

3. The provision of two-way communication between teacher, tutor, or educational agency, and learner

4. Volitional control of learning by students rather than by the distance instructor.

Characteristics of Distance Learners

Distance learners generally have several distinct characteristics as compared to traditional learners. For example, they are usually part-time, older, for the most part are at a distance from the institution (Keegan, 1980). Further, distance learners often have more obligations (Carr, 2000).

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[2] This article was written prior to the advent of the personal computer and the World Wide Web. Instead, it focused on the category of distance education we now call "correspondence courses." However, the components are very similar.

Adults older than the traditional 18-22-year-old student, who comprise most distance learners, participate more in community than campus life and have stronger ties to career culture than to academic culture (Kerka, 1995).

Sense of Community and Distance Learning

Creating a community is not enough to solve the problems of distance learners. The more important goal is to create a sense of community. That is, unless students feel that they are part of a community of learners, the outcomes do not change (Misanchuk & Dueber, 2001).

One potential solution to the problems related to student persistence is to create on-line community (Eaton, 2000; Kruger, 2000; Palloff & Pratt, 1999). Considerable work has been done to build mechanisms into courses that will provide a way for students to become engaged in a community. The belief is that the community connections lead to greater success in the on-line courses. Creating a sense of belonging appears to be a key in helping students succeed in their on-line courses (Haythornthwaite, Kazmer, Robins, & Shoemaker, 2000; McCarthy et al., 1990; Morgan & Tam, 1999). One study (Hara, 1999) suggests that a sense of community in an on-line course helped students get past some of the technical frustrations with the course. Because the class was small, students were able to develop a sense of community and supported each other during the technical difficulties.

Work is being done to use community as a way to improve student experiences in on-line learning (Palloff & Pratt, 1999; Smith & Gunderson, 2000; Swan, Shea, Fredericksen, Pickett, & Pelz, 2000). Bielman (2000) found that having students share

their thoughts, feelings, knowledge and experience helped to form on-line community, thereby reducing isolation.

Pratt (1996) lists five elements that must exist in an on-line course in order to form a community:

1. The ability to carry on an internal dialogue in order to formulate responses
2. The creation of a semblance of privacy both in terms of the space from which the person communicates and the ability to create an internal sense of privacy
3. The ability to deal with emotional issues in textual form
4. The ability to create a mental picture of the partner in the communication process
5. The ability to create a sense of presence on-line through the personalization of communications.

Summary

Community has historically been an important component of education, and has become increasingly important in the last 30 years. Creating a classroom community positively impacts student learning and persistence. Membership, Influence, Integration and Fulfillment of Needs, and Shared Emotional Connection are four components necessary for individuals to feel a psychological sense of community (PSOC), an even more important factor. However, factors such as race, age, and gender influence an individual's sense of community and may therefore impact academic and social integration, thereby impacting students' ability to succeed in their academic programs. With the multitude of problems with distance learning, helping students develop a PSOC will lower dropout rates and increase student learning and satisfaction.

CHAPTER 3

METHODOLOGY

This study explored whether a sense of community exists among students in on-line classes, determines whether there are differences in sense of community between face-to-face and on-line courses, and examines the impact of race, age, and gender on one's sense of community in an on-line course. The investigation was conducted using survey research techniques and statistical analysis for interpretation of results. This chapter presents the study's research questions, research design, population and sample, procedure, and data analysis.

Research Design

This study adopted a quantitative methodology for its research, surveying students enrolled in one or more courses taught primarily at a distance. This type of survey is appropriate in this situation because in order to infer the relationship between the independent and dependent variables, data must be collected in sufficient quantities to test the hypotheses. Quantitative data allowed the researcher to examine relationships among the variables with large populations.

Research Questions and Research Hypotheses

Research question 1 asked: Do students perceive the same psychological sense of community in their on-line courses as they do in their face-to-face courses? The answer to this question was explored by testing the following research hypothesis.

Hypothesis: Psychological sense of community is the same in on-line and traditional classes.

Research question 2 asked: Does a sense of community among on-line students vary according to personal variables? The answer to this question was explored by testing three research hypotheses.

Hypothesis 1: There is no significant difference between traditional-age college students and older college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

Hypothesis 2: There is no significant difference between male and female college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

Hypothesis 3: There is no significant difference between White college students and minority college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

Population

Since one aspect of this study was to determine whether there are differences in psychological sense of community in regard to age, gender, and ethnicity, the target population needed to reflect that diversity. The schools that participated in this study are primarily large schools with diverse student populations. The schools became involved via a broad invitation that was sent to members of the listserv maintained by Steve Gilbert of the TLT Group (Teaching Learning and Technology), an organization with a mission of working with institutions in support of the improvement of teaching and learning through the use of technology. Representatives from the schools volunteered their students to participate in the study.

The schools participating in the study were:

1. Southeast Missouri State University
2. University of Delaware
3. Northern Arizona University.

Permissions from Human Subjects Review Boards of each of these schools were granted. In addition, approval was granted from the Human Subjects Review Board of Andrews University (Appendix A).

All students enrolled in at least one distance education course at each of the institutions were invited to participate.

Instrumentation

Most of the survey questions are based on an instrument developed by McMillan and Chavis in 1986 to study neighborhood communities (McMillan & Chavis, 1986). This instrument has been widely used by other researchers (Brodsky, 1996; Plas &

Lewis, 1996; Sonn & Fisher, 1996). In the instruments documentation, Chavis instructs researchers who are adapting his instrument to substitute an alternate referent for neighborhood. While the instrument has been adapted for an educational setting (Zhang, 1998), specific references to its use in distance education have not been located.

Chipuer and Perry (1999) established the validity of the instrument, citing several studies establishing construct validity. For example, Perkins, Florin, Rich, Wandersman, & Chavis (1990) used a telephone survey to demonstrate that higher scores on the index were significantly associated with respondents who had lived longer in their neighborhoods, had a higher rating of block satisfaction, and lower ratings of fear of crime. McCarthy, Pretty, and Catano (1990) found a relationship between high SCI scores and low scores on burnout and high scores on well-being variables.

For this study, the scale was adapted to measure sense of community in an on-line learning environment. For example, the question "People on this block do not share the same values" was adapted to "People in my on-line class(es) do not share the same values." The true/false response format was retained.

The survey is divided into three parts:

1. Questions related to Internet tools used in the students' on-line courses
2. Questions modified from McMillan and Chavis's 1986 psychological sense of community survey
3. Demographic information.

The survey is located in Appendix B.

Pilot Study

A pilot study of the survey was conducted during the Spring 2003 semester. Six hundred and fifty-three of 3,400 students (19%) at Southeast Missouri State responded. The sample included students taking courses on campus and students taking classes on-line.

The purpose of the pilot was to determine the usability of the instrument in an educational setting. An additional question asking for comments on the survey, and the wording of the questions was included. While there were a number of comments on the survey process, none of the participants made note of the questions themselves. Comments included:

> *"I enjoyed all of my on-line classes and thought it was a great way to take classes."*
>
> *"On line courses are good, they are really self taught. You have to be disciplined in order to keep up. I will take another on-line class because if fits into my schedule better."*
>
> *"I really like on-line classes. They allow you to do you work whenever you want. This is a great thing since I'm a full-time student, work full-time, and am involved in two organizations on campus."*
>
> *"I have to admit that if I could finish my degree by taking all of my courses on-line I would do it. Working full-time, being married, and trying to go to school is sometimes quite a juggle. On-line course give me the education I want, while at the same time allowing to have a family life and a career."*

There were a few comments related to the survey itself. These included:

> *"You need to specify if the 'sense of community' part is for all classes, or only on-line classes."*
>
> *"I don't believe I understood question #12." [If there is a problem in my class(es), my classmates can get it solved.]*
>
> *"Just so you know questions 8-15 did not show up."*

"I felt like this survey did not pertain to my experiences with on-line courses. I have only taken one on-line course which was last year upon completion of my major. I don't feel like my answers will help with your study but you are more than welcome to use them. Good luck!"

"You might include as a question is whether your teacher is interactive in the projects. Or just gives instruction. Or can you figure out what you have done right or wrong."

"A few of the questions didn't apply to me and therefore they're hard to answer."

In addition, feedback was requested of colleagues in distance education and teaching and learning centers at a variety of institutions. No changes to the instrument were suggested.

In the pilot study, the differences in sense of community between students in on-line and face-to-face classes were minimal. While there were a few significant differences, overall sense of community did not differ in relation to age, ethnicity, or gender.

The study also found that there were no differences among students in the on campus programs. There may be several reasons for these results.

1. Faculty at the university are making efforts to build on-line community. These efforts are showing results.

2. Since this study split the population into those students taking none of their classes on-line and students taking at least one course on-line, no distinction was made for students taking all of their classes on-line. It is possible that students' on-campus experiences are developing the sense of community and this is being carried over into the on-line environment.

3. Characteristics of respondents. Of the 238 valid responses for sex, 172 (71.1%) were female, 216 (89.3%) were White, and 186 (76.9%) were between the ages of 18 and 23. Of the 406 students enrolled in at least one on-line course, 306 (75.4%) were female, 371 (91.4%) were White, and 347 (85.5%) were between the ages of 18 and 23.

Procedure

Students were contacted via electronic mail with a request to participate in the study. Students were informed that their responses are voluntary and confidential; was the only individual to access to the raw data. I had no way of identifying respondents. Students were also informed that the data might be used for presentations or papers, but never in raw form. Approximately 1 week after the initial mailing, a reminder was sent to the students.

SurveyMonkey.com was used to collect data. SurveyMonkey.com has strict polices about the confidentiality of data used in surveys on its servers. Only the primary researcher has direct access to raw data. Before participants could access the survey, they were asked to consent to the survey. An on-line consent form provided participants with information about the survey and an option to not continue the survey (Appendix C).

Data Analysis

Several methodologies were used to analyze the data.

1. To determine whether students sense of community is different in their on-line and face-to-face classes, *matched-pair t-tests* were used to compare the students responses to the questions related to their on-line questions to the same set of questions in relation to their face-to-face classes.

2. Since the 12 items on the Sense of Community Index are true/false, *logistic regressions* were used on each of the individual questions to determine if students' psychological sense of community varied on the basis of ethnicity, age, and gender.

3. Finally, *multiple regression* was used to determine whether there are differences among populations for an overall score on the Sense of Community Index (SCI) and the four sub-scales of each of the four domains.

CHAPTER 4

ANALYSIS OF THE DATA

Descriptive Analysis of the Population

During the fall 2003 semester, 3,718 students at three universities were invited to participate in the study. The invitations were sent to e-mail addresses provided by the directors of distance learning departments at the respective institutions. Of the initial population, 129 messages were returned due to various circumstances, leaving a population of 3,687 students who were enrolled in at least one on-line course and who potentially received the invitation. Response rate from the three schools ranged from 28% to 38%.

Demographics

The final five questions on the survey asked for information regarding demographics. This information was useful for two reasons. First, it allowed differences among populations to be determined with respect to sense of community. Second, the demographic information provided a way to determine how closely the respondents represent the overall population. Tables 1 to 3 describe the demographics for the three institutions.

Table 1

Age of Student Population (in Percentages)

Age	Delaware	Northern Arizona	Southeast Missouri State	Total
18-22	31.0	33.1	48.8	39.1
23-30	22.1	25.9	26.6	25.4
31-39	22.1	16.2	10.6	15.1
40-45	12.4	10.9	6.3	9.3
46-51	8.0	9.0	6.5	7.7
52-57	4.0	4.5	0.9	2.9
58-63	0.0	.5	0.2	0.3
64 and older	0.4	0.0	0.0	0.1

Table 2

Ethnicity of Student Population (in Percentages)

Ethnicity	Delaware	Northern Arizona	Southeast Missouri State	Total
Asian or Pacific Islander	2.2	1.5	0.7	1.3
Black/African American	2.7	1.0	2.0	1.7
Hispanic	4.0	9.5	1.3	4.8
Mixed Racial Background	0.0	3.5	0.7	1.6
Native American or Alaskan	0.0	6.5	1.1	2.8
White/European Descent	92.0	76.1	92.6	84.6
Decline to Answer	1.3	4.7	2.7	3.1

Table 3

Sex of Student Population (in Percentages)

Sex	Delaware	Northern Arizona	Southeast Missouri State	Total
Female	75.6	80.1	79.5	78.9
Male	24.4	19.9	20.5	21.1

The directors of the distance learning programs at the three institutions report that the age, sex, and ethnicity of the respondents reflects (within one or two percentage points) the enrollment in their programs.

Results

The instrument consisted of 24 true/false questions related to students' psychological sense of community (PSOC). Half of the questions were related to PSOC in relation to on-line classes, while the other half of the questions was related to face-to-face classes. Generally, a "1" indicates agreement with the statement, whereas a "0" indicates disagreement. Four of the questions are reversed. Thus, a "1" indicates disagreement with the statement and a "0" indicates agreement. The questions with reverse scores have been indicated below. Each question is related to one of the four components of PSOC (membership, influence, integration and fulfillment of needs, and shared emotional connection).

Tables 4 through 15 indicate how students responded to the first 12 of the 24 questions relating to their on-line classes.

Table 4

Responses to Question 5, "I Think the Other Students in My On-Line Class(es) Are Good People"

Response	Frequency	Percentage
False	27	2.3
True	962	83.0
Total	989	85.3
No Response	170	14.7
TOTAL	1,159	100.0

Table 5

Responses to Question 6, "People in My On-line Class(es) Do Not Share the Same Values"

Response	Frequency	Percentage
False	694	59.9
True	272	23.5
Total	966	83.3
No Response	193	16.7
TOTAL	1,159	100.0

Table 6

Responses to Question 7, "My Classmates and I Want the Same Thing From On-line Class(es)"

Response	Frequency	Percentage
False	694	59.9
True	272	23.5
Total	966	83.3
No Response	193	16.7
TOTAL	1,159	100.0

Table 7

Responses to Question 8, "I Know Most of the People in My On-Line Class(es)"

Response	Frequency	Percentage
False	979	84.5
True	72	6.2
Total	1,051	90.7
No Response	108	9.3
TOTAL	1,159	100.0

Table 8

Responses to Question 9, "I Feel At Home in My On-Line Class(es)"

Response	Frequency	Percentage
False	300	25.9
True	747	64.5
Total	1,047	90.3
No Response	112	9.7
TOTAL	1,159	100.0

Table 9

Responses to Question 10, "Very Few of My Classmates in My On-Line Class(es) Know Me"

Response	Frequency	Percentage
False	948	81.8
True	109	23.5
Total	1,057	83.3
No Response	102	16.7
TOTAL	1,159	100.0

Table 10

Responses to Question 11, "I Care About What My Classmates in My On-line Class(es) Think of My Actions"

Response	Frequency	Percentage
False	652	56.3
True	383	33.0
Total	1,035	89.3
No Response	124	10.7
TOTAL	1,159	100.0

Table 11

Responses to Question 12, "I Have No Influence Over What My On-line Class(es) Are Like"

Response	Frequency	Percentage
False	585	50.5
True	476	41.1
Total	1,061	91.5
No Response	98	8.5
TOTAL	1,159	100.0

Table 12

Responses to Question 13, "If There Is a Problem in My On-line Class(es), My Classmates Can Get It Solved"

Response	Frequency	Percentage
False	496	42.8
True	503	43.4
Total	999	86.2
No Response	160	13.8
TOTAL	1,159	100.0

Table 13

Responses to Question 14, "It Is Very Important for Me to Participate in My On-line Class(es)"

Response	Frequency	Percentage
False	184	15.9
True	856	73.9
Total	1,040	89.7
No Response	119	10.3
TOTAL	1,159	100.0

Table 14

Responses to Question 15, "People in My On-Line Class(es) Generally Don't Get Along With Each Other"

Response	Frequency	Percentage
False	18	1.6
True	957	82.6
Total	975	84.1
No Response	184	15.9
TOTAL	1,159	100.0

Table 15

Responses to Question 16, "I Expect to Keep in Contact With Some Members of My On-Line Class(es) for a Long Time"

Response	Frequency	Percentage
False	873	75.3
True	153	13.2
Total	1,026	88.5
No Response	133	11.5
TOTAL	1,159	100.0

The second set of questions related directly to face-to-face classes. Because the survey was sent to students enrolled in at least one on-line course, many of the respondents were not enrolled in face-to-face classes. The survey had a skip pattern so that those students were not offered the second set of questions. About 430 students were not offered the second set of questions. Tables 16 through 27 indicate show how students responded to the last 12 questions related to their face-to-face classes.

Table 16

Responses to Question 18, "I Think the Other Students in My Face-to-Face Class(es) Are Good People"

Response	Frequency	Percentage
False	15	1.3
True	713	61.5
Total	728	62.8
No Response	431	37.2
TOTAL	1,159	100.0

Table 17

Responses to Question 19, "People in My Face-to-Face Class(es) Do Not Share the Same Values"

Response	Frequency	Percentage
False	250	21.6
True	471	40.6
Total	721	62.2
No Response	438	37.8
TOTAL	1,159	100.0

Table 18

Responses to Question 20, "My Classmates and I Want the Same Thing From Face-to-Face Class(es)"

Response	Frequency	Percentage
False	127	11.0
True	600	51.8
Total	727	62.7
No Response	432	37.3
TOTAL	1,159	100.0

Table 19

Responses to Question 21, "I Know Most of the People in My Face-to-Face Class(es)"

Response	Frequency	Percentage
False	259	22.3
True	476	41.1
Total	735	63.4
No Response	424	36.6
TOTAL	1,159	100.0

Table 20

Responses to Question 22, "I Feel at Home in My Face-to-Face Class(es)"

Response	Frequency	Percentage
False	86	7.4
True	645	55.7
Total	731	63.1
No Response	428	36.9
TOTAL	1,159	100.0

Table 21

Responses to Question 23, "Very Few of My Classmates in My Face-to-Face Class(es) Know Me"

Response	Frequency	Percentage
False	253	21.8
True	477	41.2
Total	730	63.0
No Response	429	37.0
TOTAL	1,159	100.0

Table 22

Responses to Question 24, "I Care About What My Classmates in My Face-to-Face Class(es) Think of My Actions"

Response	Frequency	Percentage
False	228	19.7
True	507	43.7
Total	735	63.4
No Response	424	36.6
TOTAL	1,159	100.0

Table 23

Responses to Question 25, "I Have No Influence Over What My Face-to-Face Class(es) Are Like"

Response	Frequency	Percentage
False	213	18.4
True	520	44.9
Total	733	63.2
No Response	426	36.8
TOTAL	1,159	100.0

Table 24

Responses to Question 26, "If There Is a Problem in My Face-to-Face Class(es), My Classmates Can Get It Solved"

Response	Frequency	Percentage
False	144	12.4
True	577	49.8
Total	721	62.2
No Response	438	37.8
TOTAL	1,159	100.0

Table 25

Responses to Question 27, "It Is Very Important for Me to Participate in My Face-to-Face Class(es)"

Response	Frequency	Percentage
False	72	6.2
True	660	56.9
Total	732	63.2
No Response	427	36.8
TOTAL	1,159	100.0

Table 26

Responses to Question 28, "People in My Face-to-Face Class(es) Generally Don't Get Along With Each Other"

Response	Frequency	Percentage
False	13	1.1
True	718	61.9
Total	731	63.1
No Response	428	36.9
TOTAL	1,159	100.0

Table 27

Responses to Question 29, "I Expect to Keep in Contact With Some Members of My Face-to-Face Class(es) for a Long Time"

Response	Frequency	Percentage
False	245	21.1
True	489	42.2
Total	734	63.3
No Response	425	36.7
TOTAL	1,159	100.0

Research Question 1 Analysis and Institutional Differences

Research question 1 asked: Do students perceive the same psychological sense of community in their on-line courses as they do in their face-to-face courses?

Participants were asked to respond to two sets of similar questions – one set related to their on-line courses and the second set related to their face-to-face classes. Matched-pair t-tests were used on each of the 12 components of the instrument to compare the responses. Although 1,159 students responded to the survey, about 430 respondents did not take this part of survey. Students enrolled in at least one on-line course were invited to participate in the study. Only those students who were also enrolled in face-to-face classes continued the survey to respond to the same set of questions related to their traditional courses.

The instrument was scored so that a "1" indicated agreement with the statement, while a "0" indicated disagreement. Four of the items (2, 6, 8, and 11) were stated in such a way that the results had to be reversed to reflect an accurate number. For those four items, a "1" indicated disagreement with the statement, and a "0" reflected agreement.

Of the 12 questions on the instrument, significant differences in the questions were identified in 9 (Table 28). Respondents were more likely to respond positively to their face-to-face classes than to their on-line courses.

Of the 9 questions with differences, only 1 (People in my on-line class(es) do not share the same values; People in my face-to-face class(es) do not share the same values had an opposite impact. Respondents reported that their face-to-face classmates shared the same values more frequently than they did with their on-line courses. When the results are separated by institution, only the respondents at Northern Arizona University reported this difference.

Next, matched-pair t-tests were used on each of the four components: membership, influence, integration and fulfillment of needs, and shared emotional connection (Table 29). Three of the four components (all except "integration and fulfillment of needs") yielded strong correlations, with respondents scoring lower on distance courses than on face-to-face courses.

Finally, matched-pairs were used to compare the overall sense of community scores in distance and face-to-face classes (Table 30). Students reported a much lower total score for the distance classes than they did for their face-to-face classes.

While respondents at the three institutions reported the same lower score on the SCI with their distance courses, several exceptions are worth noting.

Table 28

Matched-Pair t-tests of 12 Items on Sense of Community Index

Item		Paired Differences			t	df	*Sig. (2-tailed)*
		Mean	*SD*	*SE*			
Pair 1	I think the other students in my on-line class(es) are good people - I think the other students in my face-to-face class(es) are good people	-.01	.197	.008	-.784	672	.433
Pair 2	People in my on-line class(es) do not share the same values - People in my face-to-face class(es) do not share the same values	.05	.464	.018	2.848	662	.005
Pair 3	My classmates and I want the same thing from on-line class(es) - My classmates and I want the same thing from face-to-face class(es)	.00	.389	.015	.298	669	.766
Pair 4	I know most of the people in my on-line class(es) - I know most of the people in my face-to-face class(es)	-.59	.501	.019	-31.4	709	.000
Pair 5	I feel at home in my on-line class(es) - I feel at home in my face-to-face class(es)	-.21	.529	.020	-10.4	699	.000
Pair 6	Very few of my classmates in my on-line class(es) know me. - Very few of my classmates in my face-to-face class(es) know me.	-.57	.513	.019	-29.5	707	.000
Pair 7	I care about what my classmates in my on-line class(es) think of my actions - I care about what my classmates in my face-to-face class(es) think of my actions	-.37	.511	.019	-18.9	698	.000
Pair 8	I have no influence over what my on-line class(es) are like - I have no influence over what my face-to-face class(es) are like	-.29	.565	.021	-13.8	713	.000
Pair 9	If there is a problem in my on-line class(es), my classmates can get it solved - If there is a problem in my face-to-face class(es), my classmates can get it solved	-.33	.542	.021	-15.9	672	.000
Pair 10	It is very important to me to participate in my on-line class(es) - It is very important to me to participate in my face-to-face class(es)	-.09	.411	.016	-5.619	698	.000
Pair 11	People in my on-line class(es) generally don't get along with each other - People in my face-to-face class(es) generally don't get along with each other	.00	.178	.007	.218	662	.827
Pair 12	I expect to keep in contact with some members of my on-line class(es) for a long time - I expect to keep in contact with some members of my face-to-face class(es) for a long time	-.54	.521	.020	-27.2	696	.000

Table 29

Matched-Pair t-tests of 4 Sense of Community Index Components

	Paired Differences					
Item	Mean	*SD*	*SE*	t	df	*Sig. (2-tailed)*
Membership	-1.3723	1.18227	.04517	-30.378	684	.000
Influence	-.9804	1.13011	.04386	-22.355	663	.000
Integration and Fulfillment of Needs	.0509	.70909	.02786	1.828	647	.068
Shared Emotional Connection	-.2652	1.16653	.04608	-5.756	640	.000

Table 30

Matched-Pair t-test of Overall Psychological Sense of Community

	Paired Differences					
Item	Mean	*SD*	*SE*	t	df	*Sig. (2-tailed)*
Total SCI	-2.8921	2.59713	.10665	-27.117	592	.000

As mentioned above, only the students at Northern Arizona University reported that "people in on-line classes shared the same values" more frequently than in their face-to-face courses. In addition, respondents at Southeast Missouri State University reported no difference related to the importance of participating in their courses (face-to-face or distance).

Research Question 1 Discussion

Based on the data, the following conclusions can be made about the hypothesis for research question 1.

Hypothesis: Psychological sense of community is the same in on-line and traditional classes.

In response to research question 1, the alternative hypotheses should be accepted. Based on responses to the Sense of Community Index (SCI), students' psychological sense of community is much less in on-line classes than in face-to-face classes. The differences are rooted in three of the components – membership, influence, and shared emotional connection. There is no significant difference with relation to integration and fulfillment of needs.

Research Question 2 Analysis

Research question two asked: Does a sense of community among on-line students vary according to personal variables?

The data were analyzed using two methods.

First, logistic regression was used on each of the instrument's 12 items to determine whether students responded differently based on ethnicity, sex, and age. For purposes of balance because of the low numbers of minorities and students older than 22, ethnicity and age were narrowed to two categories. Age was separated into 18-22 (39%) and 23 and older. Ethnicity was separated into White (84.5%) and non-White.

Item 1

Item 1 stated: "I think the other students in my on-line class(es) are good people." Older students were more likely to respond "true" than were their younger counterparts. Minorities in online courses were less likely than Whites to agree with the statement, but did not have any differences in face-to-face courses. Females were more likely to agree than were males. However, females were also more likely to respond "true" with regard to their face-to-face classes. See Tables 31 and 32.

Table 31

Logistic Regression of Item 1 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	1.425	.474	9.036	1	.003	4.156
Minority	-1.226	.542	5.110	1	.024	.293
Female	1.235	.437	7.974	1	.005	3.440
(Constant)	2.395	.366	42.871	1	.000	10.966

Table 32

Logistic Regression of Item 1 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.742	.613	1.468	1	.226	2.101
Minority	-.165	1.067	.024	1	.877	.848
Female	1.322	.570	5.383	1	.020	3.750
(Constant)	2.794	.463	36.429	1	.000	16.346

Item 2

Item 2 stated: "People in my on-line class(es) do not share the same values." Minority students were more likely to respond negatively to this statement than their White counterparts. Females responded positively to this question in regards to their on-line and face-to-face courses more frequently than their male counterparts. See Tables 33 and 34.

Table 33

Logistic Regression of Item 2 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.009	.152	.004	1	.950	.991
Minority	-.474	.220	4.631	1	.031	.622
Female	.454	.175	6.738	1	.009	1.575
(Constant)	.676	.178	14.480	1	.000	1.965

Table 34

Logistic Regression of Item 2 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.050	.161	.095	1	.758	.952
Minority	-.415	.271	2.344	1	.126	.661
Female	.407	.196	4.291	1	.038	1.502
(Constant)	.372	.190	3.818	1	.051	1.451

Item 3

Item 3 stated: "My classmates and I want the same thing from on-line class(es)." Minority students were less likely to agree with this statement about their on-line courses than non-minority students, while they were more likely to agree in relation to their face-to-face classes. See Tables 35 and 36.

Table 35

Logistic Regression of Item 3 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.041	.192	.045	1	.833	1.041
Minority	-.523	.263	3.966	1	.046	.593
Female	.331	.218	2.298	1	.130	1.392
(Constant)	1.563	.221	49.951	1	.000	4.772

Table 36

Logistic Regression of Item 3 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.238	.203	1.367	1	.242	.788
Minority	1.216	.528	5.296	1	.021	3.375
Female	.092	.250	.134	1	.714	1.096
(Constant)	1.567	.245	41.060	1	.000	4.792

Item 4

Item 4 stated: "I know most of the people in my on-line class(es)." In on-line classes, females were more likely to agree with this statement than males. In the face-to-face classes, females were more likely to agree with this statement, whereas older students were less likely to agree. See Tables 37 and 38.

Table 37

Logistic Regression of Item 4 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.271	.271	1.004	1	.316	1.311
Minority	.176	.376	.219	1	.640	1.193
Female	.983	.436	5.098	1	.024	2.674
(Constant)	-3.675	.452	66.171	1	.000	.025

Table 38

Logistic Regression of Item 4 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.458	.160	8.209	1	.004	.632
Minority	.015	.277	.003	1	.956	1.015
Female	.414	.195	4.507	1	.034	1.512
(Constant)	.532	.191	7.761	1	.005	1.702

Item 5

Item 5 stated: "I feel at home in my on-line class(es)." Older students were more likely to agree with this statement in relation to their on-line classes than their younger counterparts, whereas there was no difference in face-to-face classes. Females were likely to disagree with this statement with regard to their face-to-face classes, but not with their on-line courses. See Tables 39 and 40.

Table 39

Logistic Regression of Item 5 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.591	.143	16.990	1	.000	1.805
Minority	-.209	.225	.862	1	.353	.812
Female	.124	.173	.517	1	.472	1.132
(Constant)	.508	.173	8.620	1	.003	1.661

Table 40

Logistic Regression of Item 5 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.099	.239	.170	1	.680	1.104
Minority	-.615	.361	2.896	1	.089	.541
Female	.762	.260	8.560	1	.003	2.143
(Constant)	1.476	.247	35.649	1	.000	4.375

Item 6

Item 6 stated: "Very few of my classmates in my on-line class(es) know me." Although older students disagreed with this statement more often than their younger classmates in the face-to-face classes, there were no differences between any of the populations in the on-line classes. See Tables 41 and 42.

Table 41

Logistic Regression of Item 6 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.142	.217	.428	1	.513	1.153
Minority	-.048	.338	.020	1	.887	.953
Female	-.005	.258	.000	1	.984	.995
(Constant)	-2.254	.268	70.546	1	.000	.105

Table 42

Logistic Regression of Item 6 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.431	.161	7.162	1	.007	.650
Minority	-.337	.270	1.556	1	.212	.714
Female	.324	.197	2.693	1	.101	1.382
(Constant)	.648	.193	11.228	1	.001	1.912

Item 7

Item 7 stated: "I care about what my classmates in my on-line class(es) think of my actions." In face-to-face classes, minority students were less likely to agree with this statement than non-minority students. However, in on-line courses, females and older students agreed with this statement more often than their colleagues. See Tables 43 and 44.

Table 43

Logistic Regression of Item 7 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.663	.140	22.353	1	.000	1.941
Minority	.289	.208	1.940	1	.164	1.335
Female	.420	.172	5.948	1	.015	1.522
(Constant)	-1.272	.182	48.935	1	.000	.280

Table 44

Logistic Regression of Item 7 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.121	.167	.527	1	.468	.886
Minority	-1.096	.268	16.704	1	.000	.334
Female	.362	.202	3.217	1	.073	1.436
(Constant)	.734	.197	13.933	1	.000	2.083

Item 8

Item 8 stated: "I have no influence over what my on-line class(es) are like." There were no differences in response among populations for the face-to-face or on-line courses. See Tables 45 and 46.

Table 45

Logistic Regression of Item 8 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.207	.131	2.490	1	.115	1.230
Minority	.132	.202	.427	1	.513	1.141
Female	.300	.159	3.532	1	.060	1.349
(Constant)	-.574	.165	12.142	1	.000	.563

Table 46

Logistic Regression of Item 8 for Face-to-Face Classes

Variable	B	SE	*Wald*	*df*	*Sig.*	*Exp(B)*
Older	-.136	.168	.660	1	.417	.873
Minority	-.220	.283	.607	1	.436	.802
Female	.391	.202	3.769	1	.052	1.479
(Constant)	.690	.197	12.312	1	.000	1.994

Item 9

Item 9 stated: "If there is a problem in my on-line class(es), my classmates can get it solved." There were no differences in responses among populations for the face-to-face or on-line courses. See Tables 47 and 48.

Table 47

Logistic Regression of Item 9 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.217	.133	2.638	1	.104	1.242
Minority	.185	.209	.786	1	.375	1.203
Female	.171	.162	1.123	1	.289	1.187
(Constant)	-.261	.165	2.490	1	.115	.770

Table 48

Logistic Regression of Item 9 for Face-to-Face Classes

Variable	B	SE	Wald	*df*	Sig.	Exp(B)
Older	-.346	.193	3.223	1	.073	.707
Minority	-.062	.331	.035	1	.852	.940
Female	.247	.232	1.131	1	.288	1.280
(Constant)	1.397	.229	37.316	1	.000	4.045

Item 10

Item 10 stated: "It is very important to me to participate in my on-line class(es)." Responses were similar by populations with regard to face-to-face and on-line courses. In both types of courses, females and older students were more likely to respond positively to this question. See Tables 49 and 50.

Table 49

Logistic Regression of Item 10 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.657	.171	14.792	1	.000	1.928
Minority	.553	.333	2.754	1	.097	1.739
Female	.640	.191	11.201	1	.001	1.896
(Constant)	.654	.186	12.357	1	.000	1.924

Table 50

Logistic Regression of Item 10 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	1.036	.287	13.067	1	.000	2.819
Minority	1.819	1.020	3.184	1	.074	6.167
Female	.744	.279	7.116	1	.008	2.105
(Constant)	1.173	.249	22.264	1	.000	3.231

Item 11

Item 11 stated: "People in my on-line class(es) generally don't get along with each other. There were no differences among populations in their face-to-face classes. However, minority students were more likely to agree with this statement with regard to their on-line classes. See Tables 51 and 52.

Table 51

Logistic Regression of Item 11 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.599	.520	1.324	1	.250	1.820
Minority	-1.485	.568	6.826	1	.009	.226
Female	.955	.529	3.263	1	.071	2.599
(Constant)	3.334	.499	44.696	1	.000	28.061

Table 52

Logistic Regression of Item 11 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.756	.698	1.174	1	.279	2.131
Minority	-.244	1.073	.052	1	.820	.784
Female	.050	.800	.004	1	.950	1.052
(Constant)	3.936	.746	27.880	1	.000	51.233

Item 12

Item 12 stated: "I expect to keep in contact with some members of my on-line class(es) for a long time." While older students were less likely than the younger students to respond positively in their face-to-face classes, they were more likely to respond positively when responding to questions about their on-line classes. See Tables 53 and 54.

Table 53

Logistic Regression of Item 12 for On-line Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	.650	.199	10.675	1	.001	1.915
Minority	.034	.278	.015	1	.904	1.034
Female	.439	.247	3.149	1	.076	1.551
(Constant)	-2.512	.268	88.102	1	.003	.081

Table 54

Logistic Regression of Item 12 for Face-to-Face Classes

Variable	B	SE	*Wald*	df	*Sig.*	*Exp(B)*
Older	-.540	.162	11.080	1	.001	.583
Minority	.409	.299	1.864	1	.172	1.505
Female	.302	.198	2.331	1	.127	1.353
(Constant)	.702	.194	13.041	1	.000	2.019

Comparison of Four Components

Multiple regression was used on each of the four components to determine whether there were differences in populations with regard to how students scored each of the four components. The score for each component was determined by adding together the score (zero or one) for each item of that component. The range for each component is from 0 to 3.

Membership (Items 4, 5, and 6)

While older students tended to have a lower score in face-to-face classes on this component than their younger classmates, they had a higher score than the others in their

on-line courses. Females were more likely to score higher on this component in face-to-face classes than in on-line classes. See Tables 55 and 56.

Table 55

Multiple Regression of Membership Component for On-line Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.073	.057	.041	1.291	.197
Older	.145	.047	.099	3.116	.002
Minority	-.031	.074	-.013	-.422	.673
(Constant)	.740	.058		12.813	.000
$R^2 = .012$					

Table 56

Multiple Regression of Membership Component for Face-to-Face Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	-.252	.100	.095	2.519	.012
Older	-.201	.080	-.095	-2.523	.012
Minority	-.153	.140	-.041	-1.093	.275
(Constant)	2.108	.098		21.510	.000
$R^2 = .020$					

Influence
(Items 1, 2, and 3)

Older students reported no differences in face-to-face classes. However, they scored higher on this component in the on-line classes. Females scored higher than males in both face-to-face and on-line courses. Finally, while minority students scored lower

than non-minorities in face-to-face classes, there was no difference between the two populations in on-line classes. See Tables 57 and 58.

Table 57

Multiple Regression of Influence Component for On-line Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.175	.083	.068	2.115	.035
Older	.285	.068	.136	4.189	.000
Minority	.133	.105	.041	1.265	.206
(Constant)	1.037	.084		12.289	.000
$R^2 = .026$					

Table 58

Multiple Regression of Influence Component for Face-to-Face Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.169	.084	.076	2.001	.046
Older	-.105	.067	-.059	-1.561	.119
Minority	-.295	.118	-.095	-1.561	.119
(Constant)	2.164	.082		26.300	.000
$R^2 = .019$					

Integration and Fulfillment of Needs
(Items 7, 8, and 9)

Minorities scored this item lower than non-minorities in on-line classes. This difference did not exist in face-to-face classes. Females scored higher than males in both on-line and face-to-face classes. See Tables 59 and 60.

Table 59

Multiple Regression of Integration and Fulfillment of Needs Component for On-line Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.177	.057	.103	3.120	.002
Older	.035	.047	.025	.753	.451
Minority	-.194	.072	-.089	-2.681	.007
(Constant)	2.420	.057		42.195	.000
$R^2 = .018$					

Table 60

Multiple Regression of Integration and Fulfillment of Needs Component for Face-to-Face Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.134	.068	.075	1.981	.048
Older	-.033	.054	-.023	-.605	.546
Minority	.023	.094	.009	.247	.805
(Constant)	2.370	.066		36.008	.000

Shared Emotional Connection
(Items 10, 11, and 12)

Whereas older students tended to have a lower score in face-to-face classes on this component than their younger classmates, they had a higher score than the others in their on-line courses. Females scored higher on this component in both face-to-face and on-line classes. See Tables 61 and 62.

Table 61

Multiple Regression of Shared Emotional Connection Component for On-line Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.176	.046	.124	3.817	.000
Older	.187	.038	.159	4.894	.000
Minority	.014	.059	.008	.243	.808
(Constant)	1.719	.047		36.673	.000
$R^2 = .042$					

Table 62

Multiple Regression of Shared Emotional Connection Component for Face-to-Face Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.252	.100	.095	2.519	.012
Older	-.201	.080	-.095	-2.523	.012
Minority	-.153	.140	-.041	-1.093	.275
(Constant)	2.108	.098		21.510	.000
$R^2 = .020$					

Psychological Sense of Community

An overall total score was tabulated by summing the four components. Multiple regression was used to determine the differences among populations. While older students scored lower on the SCI than the traditional-age students with respect to their face-to-face classes, they scored significantly higher than those students in their on-line classes. Females scored higher in both face-to-face and on-line classes. See Tables 63 and 64.

Table 63

Multiple Regression of Psychological Sense of Community for On-line Classes

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.729	.166	.146	4.379	.000
Older	.727	.137	.178	5.315	.000
Minority	-.060	.212	-.009	0.283	.000
(Constant)	5.837	.168		34.710	.000
R^2 = .053					

Table 64

Multiple Regression of Psychological Sense of Community for Face-to-Face Classes

Model (R Square = .027)	*Unstandardized Coefficients*		*Standardized Coefficients*	t	*Sig.*
	B	*SE*	Beta		
Female	.702	.218	.124	3.217	.001
Older	-.433	.173	-.096	-2.500	.013
Minority	-.380	.306	-.048	-1.245	.214
(Constant)	9.138	.212		43.133	.000
R^2 = .027					

Research Question 2 Discussion

Table 65 summarizes how the populations responded to the 12 questions, the four components, and the overall PSOC for both on-line and face-to-face classes. A plus sign (+) indicates that the population scored higher on a question or component than their counterparts, while a minus sign (-) indicates the opposite.

Table 65

Summary of Data

	Older		Minority		Female	
	F2F	Online	F2F	Online	F2F	Online
Item 1		+		-		+
Item 2				-	+	+
Item 3			+	-		
Item 4	-				+	+
Item 5		+			+	
Item 6	-					
Item 7		+	-			+
Item 8						
Item 9						
Item 10	+	+			+	+
Item 11				+		
Item 12	-	+				
Membership	-	+			+	
Influence		+	-			+
Integration and Fulfillment of Needs				-	+	+
Shared Emotional Connection	-	+			+	+
Total PSOC	-	+			+	+

Note. F2F indicates face-to-face classes. A plus sign (+) indicates that the population scored higher on a question or component than their counterparts, while a minus sign (-) indicates the opposite.

Based on the data, the following conclusions can be made about the three hypotheses for Question 2.

Hypothesis 1: There is no significant difference between traditional-age college students and older college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

The null hypothesis was rejected. Older students actually report a higher sense of community than their younger colleagues. In fact, older students appear to benefit substantially from taking their courses on-line. Of the 12 items, 3 appear to indicate greater sense of community in on-line classes when there were no differences in face-to-face. Two items indicate no differences between older and younger students in on-line courses, whereas the older students rated those same three items lower in the face-to-face classes. The analysis of Item 12 revealed that older students agreed less than younger students in face-to-face classes, but agreed more to the same item in their on-line classes.

Of the four components, three received higher scores from older students in on-line classes than face-to-face classes. Older students felt a greater sense of membership, greater influence, and more of a shared emotional connection than younger students, while the opposite was true with membership and shared emotional connection in face-to-face classes.

The total showed that older students had a higher overall psychological sense of community than their younger counterparts in on-line courses whereas they had a lower PSOC in face-to-face classes.

Hypothesis 2: There is no significant difference between male and female college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

The null hypothesis was rejected. Females actually report a higher sense of community than males. Females also reported a higher PSOC in face-to-face classes. Of the 12 items in the instrument, females were more likely to agree with the statements on 3

of the items related to face-to-face classes, and 5 of the statements in on-line courses. Three of the items indicate higher agreement than males in on-line courses where there had been no differences in the face-to-face classes. Interestingly, one item (#5) revealed a higher level of agreement in the face-to-face classes whereas there were no differences in the on-line classes.

Of the four components, females were more likely to feel a sense of influence than males in on-line classes, whereas there was no difference in face-to-face classes. Females were also more likely than males to indicate greater integration and fulfillment of needs and shared emotional connection in both face-to-face and on-line classes than were males. However, females were more likely than males to feel a sense of membership in face-to-face classes whereas there were no differences between the two groups in on-line classes.

Females were more likely than males to feel a greater PSOC in both face-to-face and on-line classes.

Hypothesis 3: There is no significant difference between White college students and minority college students regarding a sense of community (membership, influence, integration and fulfillment of needs, and shared emotional connection) in an on-line learning environment.

The null hypothesis was accepted, with caveats. While the overall PSOC revealed no differences between minority and White students in on-line classes, there were also no differences in how minority students felt about the sense of community in face-to-face classes. Results for the individual items on the instrument were mixed. Most showed minimal effect, but there were exceptions. Seven of the 12 items revealed no differences

between respondents in the face-to-face or on-line classes. Only one item (#7) showed that there were no differences in on-line classes when minorities had indicated less agreement with the statement in face-to-face classes. With regard to Item 11, minorities showed a greater inclination than Whites to agreeing with the item where there had been no difference between the two populations in their face-to-face classes. However, the three items related to influence (#1, 2, and 3) showed that minorities were less likely to agree with the statement in on-line classes, whereas they had been as likely or more likely to agree with the statement when responding to face-to-face classes.

Of the four components, minorities indicated the same scores as non-minorities in on-line and face-to-face classes with regard to membership and shared emotional connection. They also indicated the same score as non-minorities with regard to influence, whereas they had felt less influence in face-to-face classes. However, they felt less integration and fulfillment of needs than non-minority students in on-line classes whereas there had been no differences between the populations in their face-to-face classes.

CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The purpose of this research study was to determine whether psychological sense of community (PSOC) is different for students' on-line classes than it is for their face-to-face classes. Furthermore, this study examined differences among students according to sex, age, and ethnicity as a way to ascertain whether the differences that exist among populations in face-to-face settings also exist on-line.

Using a revised version of the Sense of Community Index (SCI) (McMillan & Chavis, 1986), respondents at three large universities offering distance education courses reported a greater sense of community in face-to-face classes than in on-line classes. Students in on-line classes reported a lower overall psychological sense of community (PSOC) as well as a lower score for each of the four components (membership, influence, integration and fulfillment of needs, and shared emotional connection).

Overview of the Literature

Describing Distance Education

Distance education is a system and a process for providing instruction at a distance from an institution's campus. There are two aspects of distance education –

distance teaching, the teacher's role in the process; and distance learning, the student's role in the process (Lane, 1992; Verduin & Clark, 1991; Willis, 1993). Keegan (1980) identifies six components of distance education. As this article was written prior to the advent of the personal computer and the World Wide Web, it focused on the category of distance education we now call "correspondence courses." However, the components are very similar. The six components are:

1. The separation of teacher and learner, which distinguishes it from face-to-face lecturing
2. The influence of an educational organization, which distinguishes it from private study
3. The use of technical media, usually print, to unite teacher and learner and carry the educational content
4. The provision of two-way communication so that the student may benefit from or even initiate dialog
5. The possibility of occasional meetings for both didactic and socialization purposes
6. The participation in an industrialized form of education that, if accepted, contains the genus of radical separation of distance education from other forms.

Issues Related to Distance Education

After years of high attrition rates in distance education courses, administrators determined that the model of placing as many students as possible into a single section of a class had limited success. Evidence indicated dropout rates were higher in distance courses than in traditional education by as much as 20% (Carr, 2000; Roach, 2002).

Substantial research has been undertaken to explain issues related to student persistence on campus (Bean & Metzner, 1985; Pascarella & Terenzini, 1991; V. Tinto, 1993). Additional work has focused on issues related to persistence in on-line courses. J.J. Workman and R.A. Stenard (1996) describe five components related to student persistence. One of the items is "social integration". Social integration is defined as the need for students to develop interpersonal relationships with peers, faculty, and staff (Rovai, 2002). In addition to academic integration Kember (1989; 1994) includes social in his model for improving student retention in distance education courses.

One potential solution to the problems related to student persistence is to create on-line community (Eaton, 2000; Kruger, 2000; Palloff & Pratt, 1999). Considerable work has been done to build mechanisms into courses that will provide a way for students to become engaged in a community. The belief is that the community connections lead to greater success in the on-line courses.

Defining Community

Etzioni (1996) defines community as a combination of two elements:

> A) A web of affect-laden relationships among a group of individuals, relationships that often crisscross and reinforce one another (rather than merely one-on-one or chainlike individual relationships). B) A measure of commitment to a set of shared values, norms, and meanings, and a shared history and identity-in short, to a particular culture. (p. 127)

Etzioni's definition borrows elements from two concepts developed by Ferdinand Tönnies in 1887 (1940). Tönnies wrote of *gemeinschaft* (personal-sharing oriented) and *gesellschaft* (rule-oriented, contract-bound) as two forms of community (Craig, 1993). *Gemeinschaft* is a community where individuals have limited access to leave, but every individual's views are taken into account in community decisions. *Gesellschaft*, on the

other hand, means that individuals have complete freedom to leave and the individual's vote depends on his economic activity (Segalman, 1976).

Another well-known work on the issue of community (Bellah et al., 1985) defines community as

> a group of people who are socially interdependent, who participate together in discussion and decision making, and who share certain practices (which see) that both define the community and are nurtured by it. Such a community is not quickly formed. It almost always has a history and so is also a community of memory, defined in part by its past and its memory of its past. (p. 72)

Learning Communities

Research demonstrates that a model for successful learning involves creating communities of learners. Learning communities share

> a way of knowing, a set of practices, and the shared value of the knowledge that these procedures generate. There are ways for novices and experts to work in the same system to accomplish similar goals. Community members are recognized for what they know as well as what they need to learn. . . .Cooperation rather than competition is stressed. (Riel & Fulton, 2001, p. 519)

Some studies have linked Tönnies's concepts of *gemeinschaft* and *gesellschaft* to analyze this concept (Craig, 1993; Furman, 2002; Sergiovanni, 1993).

Humans have a basic need to be part of a community (Magolda, 2001). On a college campus, that community is communicated through uniform architecture and unique buildings. According to Heller (1989), community is locality. A second conceptualization of community, according to Heller, is human relationships, formed in everyday interactions in such places and activities as dormitories, dining halls, classrooms, and organizations.

Cibulka and Nakayama (2000) identify three components of a learning community. They are: (a) student learning, (b) teacher learning, and (c) collaborative learning.

Creating Learning Communities

Much has been written to assist faculty and administrators develop courses that incorporate methods to achieve communities of learners (McLoughlin, 1999; Palloff & Pratt, 1999; Smith & Gunderson, 2000; Swan et al., 2000). Common themes throughout these works include the promotion of collaborative learning. Palloff and Pratt (1999), for example, stress the importance of collaboration in order to facilitate the development of a learning community and to achieve a course's learning goals.

Psychological Sense of Community

Even more important than whether a community is created is whether individuals feel that they are part of a community (McMillan & Chavis, 1986; Scherer, 1987). McMillan and Chavis (1986) describe four components essential for an individual to feel a psychological sense of community. They are membership, influence, integration and fulfillment of needs, and a shared emotional connection. They define a sense of community as a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through commitment to be together. While their work focused primarily on neighborhoods, Misanchuk and Dueber (2001) explored psychological sense of community among students studying in an on-line master's program.

Sense of Community and Race, Age, and Gender

Research has been undertaken to determine whether there are differences among populations in sense of community and alienation as they relate to race, age, and gender. Allen (1980) reported that young Blacks are more alienated from society than older Blacks. Steitz and Kulpa (1984) describe differences in alienation between men and women. They report that older women are more likely to feel alienated from a community, whereas it is less likely for older men. Conversely, Hays and DiMatteo (1985) found that males are significantly lonelier than females.

In an academic setting, there have also been differences noted between populations. In a study of African-American students at a predominantly White college campus, Robinson-Armstrong (1998) found that the subjects did not feel a strong affiliation in their community. Dias (1993) explored alienation on two college campuses and reported that African-Americans tended to be more alienated on a predominantly White campus than similar students on the campus of a historically Black college.

Age also affects the level of alienation from a campus community. Maxham-Kastrinos (1998) suggests that older students feel alienated on college campuses whose services are geared towards younger students. Age was also a factor in community alienation in a study examining the difficulty in returning to school (Harris, 1987).

There is some evidence that the sex of the student has an affect on the level of community alienation felt by students, although it is not clear why that is the case. McGowan (1988) found that sex of the student influenced student scores on an instrument designed to measure student adaptation to college.

Methodology

In the Fall 2003 semester, 3,718 undergraduates at three universities were invited to complete a survey related to psychological sense of community. The students were identified by the Directors of their respective Distance Education departments as being enrolled in at least one on-line class. The invitations were sent via electronic mail. Participants were directed to a web site with an on-line consent form and a link to a survey located at Surveymonkey.com.

The survey was divided into three parts. The first part asked students information about their instructors' deployment of on-line tools in their courses and whether they themselves used those tools.

Part two of the survey was based on the Sense of Community Index (SCI) developed by McMillan and Chavis (1986). The SCI was created to measure psychological sense of community in neighborhoods. It consists of 12 true/false statements relating to four components of community: membership, influence, integration and fulfillment of needs, and shared emotional connection. The instrument, as developed, provides instructions for addressing PSOC in other communities besides neighborhoods. For this study, the SCI was adapted twice: once for those courses taken on-line, and the second for face-to-face courses. Students answered the first set of questions, and then depending on whether they were enrolled in face-to-face classes during the Fall 2003 semester, answered the second set of questions. If the students were not enrolled in face-to-face classes, they skipped to part three of the survey.

Part three of the survey asked for demographic information. Demographic information included:

1. Sex
2. Age (no one under 18 was permitted to take the survey)
3. Ethnicity
4. Marital status
5. Employment status.

SPSS was used to evaluate the results of the survey.

Demographics

Overall, 35% of the 3,718 students responded to the first or second invitation to participate. Respondents were primarily White, female, and between 18-22. Overall, 78.9% identified themselves as female, while 21.1% identified themselves as male.

In response to the question on ethnicity, 1.3% identified themselves as Asian or Pacific Islander, 1.7% as Black/African American, 4.8% as Hispanic, 1.6% as Mixed Racial Background, 2.8% as Native American or Alaskan, 84.6% as White/European Descent, and 3.1% declined to answer.

The age range reported by students indicated that most students were 18-22 (39.1%). However, 25.4% identified themselves as 23-30; 15.1% as 31-39; 9.3% were 40-45; 7.7% were 46-51; 2.9% were 52-57; 0.3% were 58-63; and 0.1% were 64 and older.

Findings

This study investigated two questions.

Research Question 1

Do students perceive the same psychological sense of community in their on-line courses as they do in their face-to-face courses?

To answer this question, participants responded to two sets of similar questions. The first set asked them to respond to 12 true/false items on the revised SCI with regard to their on-line classes. If the students were also enrolled in face-to-face classes (the survey employed a skip pattern), a second SCI was presented to be answered for those classes taken on campus.

Matched-pair t-tests were used to compare each of the 12 items on the SCI, the four components of the SCI (membership, influence, integration and fulfillment of needs, and shared emotional connection), and the overall PSOC.

Nine of the 12 individual items on the SCI revealed a significant difference between on-line and face-to-face classes, with students indicating more agreement for face-to-face classes than on-line classes. There was significant difference in three of the four components (membership, influence, and shared emotional connection), again with students indicating more agreement with issues related to community in face-to-face classes. There were no significant differences between the two modes of taking classes in regard to integration and fulfillment of needs.

Finally, overall psychological sense of community in face-to-face classes was significantly higher than PSOC for on-line classes.

Research Question 2

Does a sense of community among on-line students vary according to personal variables (ethnicity, age, and sex)?

The differences among student populations were mixed. Older students appear to have the strongest sense of community in on-line classes. Although their total PSOC was lower than their younger classmates in face-to-face classes, it was higher in on-line classes. There was no difference in overall PSOC between Whites and minorities. Finally, females tended to report a higher PSOC than males in both face-to-face and on-line classes.

Discussion of the Findings

It was surprising that minority students did not indicate any difference in overall sense of community from non-minority students in face-to-face classes since research indicates that minority students sense more alienation than their non-minority colleagues on traditional campuses (Dias, 1993; Robinson-Armstrong, 1998). This result could reflect a changing atmosphere on college campuses since earlier studies were released. It could indicate a weakness in the instrument or a problem with the sample. While the population accurately represents the students enrolled in the on-line programs at the three institutions, it does not reflect the student populations on the campuses. The results do indicate, however, that among minority students who take courses on-line, there is no difference in PSOC when they take their classes on campus.

It is also interesting to note that minority students rated "integration and fulfillment of needs" lower than non-minority students for on-line courses, while not rating "integration and fulfillment of needs" lower in the face-to-face classes. For years, minorities have argued the importance of having more minority faculty and peers on campuses as a way to feel more a part of their college communities. It may be that being around others with similar characteristics helps minority students with this component

and that working in isolation without seeing students with similar characteristics reduces opportunities for fulfillment of needs.

While there was an expectation that older students would have at least an equivalent sense of community as their younger counterparts, it was unexpected that older students would have such stronger perceptions of community for their on-line classes than in their face-to-face classes. Of the four components of PSOC, older students scored significantly higher than the traditional-age students on three (membership, influence, and shared emotional connection). Again, it is not clear why this is the case. It may be that older students do not sense the same restrictions on-line that they do in class. Or, it might be that younger students need the immediate affirmation from their peers they get in a face-to-face setting that they do not get on-line.

Finally, the extent to which females had a higher sense of community than males in both on-line and face-to-face courses was very interesting. There is no obvious explanation for this difference and the data collected do not allow the reason to be determined. It may be that females naturally look for or think about being part of a community, whereas males do not. The motivations for the two populations of students might be different – males taking courses primarily to obtain accreditation of some sort and females not only seeking accreditation but being part of a community as well.

Limitations of the Study

The limitations of this study focus primarily on the populations that participated in the study. Because of the limited number of participants in some of the subpopulations, it was not possible to make comparisons as desired. For example, almost 40% of the respondents were 18-22 years of age, whereas the other age groups had smaller

percentages. The only way to compare ages was to compare the 18-22 year old group with students ages 23 and older. It would have been optimal to be able to compare other subpopulations.

Similarly, Whites comprised a significant proportion of the respondents (84.6%). Unfortunately, the other ethnic groups made up small percentages of the population. Only 1.7% of the population was Black, 4.8% was Hispanic, 1.3% was Asian or Pacific Islander, and 2.8% was Native American.

Finally, the number of females responding to the survey far outnumbered the males. Although the Directors of the three universities indicated that the respondents reflected the populations of the students enrolled in their programs, it would have been preferable to have populations with a similar *n* in order to perform a better comparison of populations.

A second limitation of the study has to do with the extent to which the findings can be generalized. The three institutions involved in the study are large State research universities. It is difficult to assume that the students at these universities are similar to students enrolled in distance education programs at other types of institutions – such as liberal arts, comprehensive or regional institutions. Further research at these types of institutions would be required before concluding that these results could apply to those other types of institutions.

Implications of the Study for Current Theory

This study is based on a model of community developed by Chavis and McMillan (1986). While the instrument developed as a result of this research indicates that it can be adapted for other situations, it is not clear that the items on the instrument necessarily

translate to a virtual community. The four components of the model (membership, influence, integration and fulfillment of needs, and shared emotional connection) might still be important in overall psychological sense of community, but the ways in which those are measured in an on-line environment may be different.

In light of the emergence of virtual communities, the traditional definition of community needs to be revised. While a virtual community still can be a group of people with common characteristics working towards a common goal, the ways in which those communities are formed may be different. For example, while a traditional community develops through informal conversations before a class begins or late at night in the university library, other forms of dialog and interaction are essential on-line since on-line time is, in fact, class time.

Implications for Future Policy and Course Design

Clearly, additional study is required before any definitive conclusions can be reached about why students have a lower sense of community in their on-line classes than in their face-to-face classes. If instructors were to focus on ways to increase students' sense of membership, influence, and shared emotional connection, then the sense of community might be increased.

Considerations for Students

The motivation for enrolling in distance education programs varies among students. Many students are interested in pursuing opportunities that would not otherwise be available in their local communities. Others are looking only to take a few classes because of general interest. However, an increasing number of students are pursuing their

degrees on-line instead of taking their classes on a college campus due to convenience, preference, cost, or any number of other reasons.

It would seem that students' academic and social integration is connected to their sense of community, something that college campuses have worked very hard to foster. Therefore, there seems to be a connection between sense of community and college success. While faculty and administrators are developing strategies for improving community in their on-line courses, it will be important to research the extent to which an institution is considering how to foster community among its on-line students.

Recommendations for Further Research

The results of this study reaffirm findings from other studies and call into question assertions made in other studies. While this is one study of many exploring sense of community on campus, it indicates that additional research is needed to examine the differences in sense of community among student populations.

There is especially strong indication that students' sense of community is diminished in on-line classes than in face-to-face classes. Further research is needed to ascertain the various strategies that might be used to improve the four dimensions of PSOC in on-line classes. There may be a variety of technologies and pedagogies that instructors could employ to help students with membership, influence, integration and fulfillment of needs, and shared emotional connection. While there are books on improving community on-line (Eaton, 2000; Kruger, 2000; Palloff & Pratt, 1999), no published work examines specific strategies as they align with the four components of PSOC.

This study also indicates that older students feel a greater sense of community than their younger colleagues in on-line communities. This is especially interesting given the common perception that younger people are more apt to embrace technology and virtual technologies. It may be the case that older students, as a minority population in a classroom of mostly 18-22-year-olds, do not feel that distinction when working on-line. It may also be the case that students have a greater need for affirmation from their peers, which is best provided in a classroom setting with others of their own age.

An additional next step in research is to develop a sense of which technologies (chat, message boards, etc.) and/or pedagogies may or may not foster PSOC in individual courses. The task is difficult since it is not only important to determine which are being used but to also examine how the tools and techniques are being used by the instructors and the degree to which students embrace them. This is similar to traditional classes whereby instructors employ a technology and then find it difficult to assess its impact on student learning. It is difficult, if not impossible, to separate the deployment of a technology in a class and its pedagogical use by an instructor.

APPENDIX A

HUMAN SUBJECTS REVIEW FORMS

Andrews University

January 13, 2004

Thomas C Laughner
115 E. J. DeBartolo Hall
University of Notre Dame
Notre Dame, IN 46556

Dear Thomas

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS
IRB Protocol #: 04-002 **Application Type:** Original **Dept:** Curriculum and Instruction
Review Category: Exempt **Action Taken:** Approved **Advisor:** Larry Burton
Protocol Title: Community Formation in Online Learning Environments

On behalf of the Institutional Review Board (IRB) I want to advise you that your proposal has been reviewed and approved. You have been given clearance to proceed with your research plans.

All changes made to the study design and/or consent form, after initiation of the project, require prior approval from the IRB before such changes can be implemented. Feel free to contact our office if you have any questions.

The duration of the present approval is for one year. If your research is going to take more than one year, you must apply for an extension of your approval in order to be authorized to continue with this project. You are also required to inform our office the moment you have completed collecting your data, and again the moment that you have completed your research. We will be checking on your progress with this research six months from today. Please use your IRB Protocol number for all communications with us.

Some proposal and research design designs may be of such a nature that participation in the project may involve certain risks to human subjects. If your project is one of this nature and in the implementation of your project an incidence occurs which results in a research-related adverse reaction and/or physical injury, such an occurrence must be reported immediately in writing to the Institutional Review Board. Any project-related physical injury must also be reported immediately to the I.R.B. physician, Dr. Herald Habernicht, by calling (269) 471-3940.

We wish you success as you implement the research project as outlined in the approved protocol.

Sincerely,

Michael D Pearson
Graduate Assistant
Office of Scholarly Research

Office of Research, (269) 471-6361
Fax: (269) 471-6246 / E-mail: mpearson@andrews.edu
Andrews University, Berrien Springs, MI 49104-0355

UNIVERSITY OF DELAWARE

OFFICE OF THE VICE PROVOST FOR RESEARCH

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

June 27, 2003

Dr. Thomas C. Laughner
Associate Director
Educational Technologies Services
Office of Information Technologies
University of Notre Dame
Notre Dame, IN 46556

Dear Dr. Laughner:

Subject: Human Subjects Review Board approval for a research project "Student Alienation in an On-Line Environment"

The above-referenced proposal, which you submitted for Human Subjects Review Board approval, will qualify as research exempt from full Human Subjects Review Board review under the following category:

> Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless (1) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects, and (2) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that under university and federal policy, all research, even if exempt, must be conducted in accordance with the Belmont Report, copies of which are available from this office or on our website under history and background of human subjects policy. Changes in this project must be approved in advance by the Human Subjects Review Board.

Sincerely,

Richard D. Holsten
Associate Provost for Research
Chair, Human Subjects Review Board

/md
cc: Jann Lightcap

NORTHERN ARIZONA UNIVERSITY

INSTITUTIONAL REVIEW BOARD FOR THE
PROTECTION OF HUMAN SUBJECTS IN RESEARCH

TO: **Thomas C. Laughner**

FROM: **Melanie Birck, IRB Administrator**

DATE: **August 21, 2003**

SUBJECT: **Expedited Review of the Use of Humans in Research**

Your research project, Case Number, **04.0010,** entitled, **"Issues of Alienation and Isolation in an Online Learning Environment",** has been approved through an expedited review procedure conducted by the Human Subjects Committee. An expedited procedure is used when the study appears to use research procedures which are of minimal risk to the human subjects involved.

Research designs which assure protection from psychological, sociological, and physical damage (and meet other civil rights conditions), are normally approved through the expedited review procedure. Some important factors which assure protection of human subjects in research are:

1. Subjects are volunteers (or are a part of an officially approved or ongoing educational program: and they may withdraw from the research at any time.)

2. Subjects are informed of the research through a verbal or oral explanation or clarification and sign a consent form (for minors, a parent or guardian signs the consent form and in medically related cases, a physician must sign for consent).

3. There are assurances that subjects cannot be identified (directly or indirectly) through responses, and in presentation of data, which may provide a link placing them in a position of risk of criminal or civil liability; or provide a link exposing sensitive aspects of the subject's behavior, e.g., use of drugs, alcohol, sexual behavior or illegal conduct.

4. The research study follows procedures of confidentiality and anonymity.

5. Research involving minimal stress, non-invasive techniques, moderate exercise of healthy volunteers and routine collection of samples of blood, saliva and similar specimens may be considered of minimal risk.

6. Other relative modifications or comments: None

To assure anonymity and research protection, consent forms and research data must be appropriately filed and protected by the researcher and the department.

If there are any irregularities resulting from the research program, please report them to the Institutional Review Board.

cc: Department Dean
Department Chair
File

PO Box 4130, Flagstaff, AZ 86011-4130 (928) 523-4880 fax (928) 523-1075

Southeast Missouri State University
ONE UNIVERSITY PLAZA • CAPE GIRARDEAU, MISSOURI 63701-4799 • (573) 651-2000 • http://www.semo.edu

Department of Agriculture

Southeast Missouri State University
One University Plaza, MS 6100
Cape Girardeau, MO 63701
(573) 651-2106 FAX (573) 651-2223

Memorandum

DATE: January 28, 2003

TO: Dr. Chris McGowan, Dean
College of Science and Mathematics

FROM: Dr. Harry W. Pry, Chair Harry W. Pry
Dr. Rex Strange, Biology
Dr. Mohan Tikoo, Mathematics
Dr. Margaret Waterman, Biology

RE: **Review of Research Proposal Involving Human Subjects**

Please find attached a research proposal submitted for review by Dr. David Starrett titled "Student Alienation in an On-Line Environment."

The review committee for the School of Polytechnic Studies and the College of Science and Mathematics, in compliance with the University policy, has made the following determination:

1. The committee places the research activity in **Category 1** – those research activities in which the subjects involved have no more than the risks associated with their customary, everyday activities or risks associated with the performance of physical or psychological examinations or tests by qualified individuals.

2. The guidelines for protection of human subjects have been met.

3. The committee recommends that the investigator be approved to proceed with the study.

Cc: Dr. Randall Shaw, Dean, School of Polytechnic Studies

Southeast
Missouri State University

Center for Scholarship in Teaching and Learning

Dr. David Starrett
Director

Sondra Phillips
Senior Secretary

Office of Instructional Technology

Tammy Randolph
Interim Instructional Design Specialist

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Web:
http://cstl.semo.edu
E-mail:
support@cstl.semo.edu

To: Fred Janzow, Dean, University Studies

From: David Starrett, Director, CSTL

Date: January 8, 2003

Subject: Human Subjects survey exemption request

Exemption approved
1-17-03

Tom Laughner in the Kaneb Center for Teaching and Learning at the University of Notre Dame has chosen Southeast as the site of a pilot research project on alienation of students in the online environment. A successful project would lead to additional campuses being selected as sites for administration of the survey. I would be working with Tom to administer his survey here. Because the project is an online survey of Southeastonline students, I am seeking approval from the *Research Involving Human Subjects Committee.*

I believe that the survey would be exempt from the full scale approval process as it meets the criteria as outlined in the faculty handbook. Following is an outline of how the survey meets the exemption requirements.

Thomas C. Laughner, Acting Director of the Kaneb Center for Teaching and Learning at the University of Notre Dame, and a doctoral candidate at Andrews University, is requesting permission to survey undergraduate students enrolled in Southeast Missouri State University's distance education program. This study is considered exempt for the following reasons.

1. Anonymity. The survey will be administered via the World Wide Web, at a site hosted by the University of Notre Dame. No identifying questions will be asked and there will be no way to determine the identify of the person submitting the survey.

2. Volunteers. All participants will have the option of participation. There will be no mechanism to make students feel that they must participate. No information will be reported back to Southeast Missouri State that will identify students who have or have not participated (the survey is anonymous).

3. Participant behavior. The questions on the survey will seek to determine student's level of alienation and isolation in an online community. As such, none of the questions will seek information about illegal or embarrassing behavior.

If there are any questions about this study, Mr. Laughner can be contacted via email (laughner@nd.edu) or telephone (574-631-9147).

Attached is an outline of the research protocol and the instrument itself.

Research Protocol
"Student Alienation in an On-Line Environment"

1. Study
   a. Purpose of Study

      This study will explore whether age, race, socioeconomic status, and gender have a bearing on whether students feel alienated in an online environment. This research study builds on findings that these variables may affect one's sense of alienation in society.

   b. Methods

      This will be a quantitative study of students currently enrolled in a distance education program at Southeast Missouri State University. Southeast was selected due to its diverse student population enrolled in its distance education program.

      Tom Laughner will develop the survey. It will be administered online, with assistance from Dr. David Starrett, Director of the Center for Scholarship in Teaching and Learning at Southeast Missouri State. Dr. Starrett will serve as liaison between Laughner and the faculty and students in the distance education program.

      Only Tom Laughner will have access to the raw data. In addition to questions about age, race, socioeconomic status, and gender, questions will attempt to ascertain each student's sense of belonging in the class community and whether student's sense of alienation relates to any of the four variables.

      Participants will be informed that individual data is completely confidential, with the only access being by Tom Laughner. However, considerations will be made for missing data during the statistical analysis.

   c. Time Frame

      The study will be conducted in the Fall 2002 semester. Data collection will begin in mid- to late-September with data analysis being conducted in October.

2. Description of the Subjects

   The subjects in this study are undergraduates at Southeast Missouri State University. As such, some may be under the age of eighteen. There should be no other factors that affect capacity to give informed consent.

3. Subject Recruitment

   All students enrolled in the distance education program at Southeast Missouri State University will be asked to participate. Involvement will be completely voluntary. The students will be informed that no one at Southeast Missouri State University will know who

has elected to participate.

The only reason participants will be excluded from the final statistical analysis will be if they do not complete the questions on the survey sufficiently for analysis to take place. For example, if a participant does not indicate his/her race, gender, socioeconomic status, or age, analysis cannot be done on that variable and that person's data will have to be excluded.

4. Benefits

There is no benefit of the research to the human subjects in this study.

As the information from this study is broadly disseminated, faculty and instructional designers will be able to use the results in their design of distance education courses to understand what students may be experiencing in their courses.

5. Welfare and Rights of Subjects

The competency of the subjects will not be compromised in this study. The study is not related to competency; rather it is related to alienation.

6. Risks and Discomforts

There are no risks or discomforts associated with this study. There may be some unease in revealing demographic information. However, participants will be assured that only Tom Laughner will have access to the raw data.

7. Confidentiality

The survey will be conducted via an Internet-based survey. The data from the survey will be e-mailed directly to Tom Laughner, who is the only person with access to his account. Data will be stored on his password-protected computer.

The survey will not ask for individual's names, so there will be no way for anyone to associate a name with data. The form itself will not capture the e-mail address of the participant nor any other information not explicitly provided with the form

APPENDIX B

SURVEY QUESTIONNAIRE

PART I

1. In how many classes are you enrolled this semester?

0	1	2	3	4	5 or more
☐	☐	☐	☐	☐	☐

2. How many of the courses you're taking this semester are completely on-line?

0	1	2	3	4	5 or more
☐	☐	☐	☐	☐	☐

PART II

Answer the following questions only as they relate to your course(s) that are completely on-line.

3. Which of the following tools do your instructors use in your on-line class(es)? (Check all that apply.)

☐	Chat
☐	Bulletin/Discussion Board
☐	Electronic Mail
☐	On-line photos of class members
☐	On-line biographies of class members
☐	Other (please specify)

4. Which of the following tools do access regularly in your on-line class(es)? (Check all that apply.)

☐	Chat
☐	Bulletin/Discussion Board
☐	Electronic Mail
☐	On-line photos of class members
☐	On-line biographies of class members
☐	Other (please specify)

5. I think the other students in my on-line class(es) are good people.

True	False
☐	☐

6. People in my on-line class(es) do not share the same values.

True	False
☐	☐

7. My classmates and I want the same thing from on-line class(es).

True	False

8. I know most of the people in my on-line class(es).

True	False

9. I feel at home in my on-line class(es).

True	False

10. Very few of my classmates in my on-line class(es) know me.

True	False

11. I care about what my classmates in my on-line class(es) think of my actions.

True	False

12. I have no influence over what my on-line class(es) are like.

True	False

13. If there is a problem in my on-line class(es), my classmates can get it solved.

True	False

14. It is very important for me to participate in my on-line class(es).

True	False

15. People in my on-line class(es) generally don't get along with each other.

True	False

16. I expect to keep in contact with some members of my on-line class(es) for a long time.

True	False
○	○

PART III

17. Are you enrolled in any courses this semester that meet face-to-face (courses that meet in a classroom on campus)?

Yes	No
○	○

Answer the following questions only as they relate to your face-to-face courses (courses that meet in a classroom on campus).

18. I think the other students in my face-to-face class(es) are good people.

True	False
○	○

19. People in my face-to-face class(es) do not share the same values.

True	False
○	○

20. My classmates and I want the same thing from face-to-face class(es).

True	False
○	○

21. I know most of the people in my face-to-face class(es).

True	False
○	○

22. I feel at home in my face-to-face class(es).

True	False
○	○

23. Very few of my classmates in my face-to-face class(es) know me.

True	False
○	○

24. I care about what my classmates in my face-to-face class(es) think of my actions.

True	False
○	○

25. I have no influence over what my face-to-face class(es) are like.

True	False
○	○

26. If there is a problem in my face-to-face class(es), my classmates can get it solved.

True	False
○	○

27. It is very important for me to participate in my face-to-face class(es).

True	False
○	○

28. People in my face-to-face class(es) generally don't get along with each other.

True	False
○	○

29. I expect to keep in contact with some members of my face-to-face class(es) for a long time.

True	False
○	○

PART IV

30. Age

○	18-22
○	23-30
○	31-39
○	40-45
○	46-51
○	52-57
○	58-63
○	64 or older

31. Ethnicity (check all that apply)

☐	Asian or Pacific Islander
☐	Black/African American
☐	Hispanic
☐	Mixed Racial Background
☐	Native American or Alaskan
☐	White/European Descendant
☐	Decline to Answer

32. Sex

○	Female
○	Male

33. Employment status

○	Full-time (30 hours or more per week)
○	Part-time (less than 30 hours per week)
○	Not employed

34. Marital status

○	Single/never married
○	Married
○	Separated
○	Divorced
○	Widowed

PART V

Please add any additional comments about your classes.

APPENDIX C

CONSENT FORM

UNIVERSITY OF NOTRE DAME Andrews University

I am Associate Director of Educational Technologies and Services at the University of Notre Dame and a doctoral candidate at Andrews University, located in Berrien Springs, Michigan. My dissertation topic relates to on-line learning communities. I'd like to request your assistance by completing a survey related to your participation in distance education at the University of Delaware.

I've prepared a survey (35 multiple-choice questions) about your experiences. The data collected in this study will be used in my dissertation and may be used in a publication, but there will be no way anyone at the University of Delaware will be able to identify you. Your individual data will only be seen by me.

Your responses to all of the questions will remain confidential. The tool used for the survey is developed by www.surveymonkey.com. Surveymonkey.com has strict policies about who is able to access data collected in surveys. The survey does not ask your name or provide for ways to indicate your identity. Your participation is voluntary. It should take you no more than 15 - 20 minutes. You may choose to stop participating at any time.

By submitting this survey you indicate that you are at least 18 years of age and that you consent to use this data. (If you are not at least 18, you may not participate.)

If you have any questions about the study you may contact me at laughner.1@nd.edu.

Thank you for your assistance on this project.

Thomas C. Laughner - laughner@nd.edu

I have read this consent form and would like to complete the survey.

I do not wish to complete the survey.

REFERENCE LIST

REFERENCE LIST

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EDUCATION

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Dissertation topic: Psychological Sense of Community in On-line Learning Environments

George Washington University, Washington, D.C. (1998)
Master of Arts, Education and Human Development, Educational Technology Leadership

University of Arizona, Tucson, Arizona (1987)
Bachelor of Science, Psychology

EXPERIENCE

University of Notre Dame (April 1990-Present)

College of Arts and Letters
August 1994 – May 2003
Concurrent Instructor. Computer Applications Program.
Applied Multimedia Technology. Undergraduate course teaching multimedia development including authoring environments, interface design, video and audio capture and compression, copyright, and multimedia delivery. Nominated for Kaneb Teaching Award, 2003

Office of Information Technologies
May 2003 – Present
Associate Director, Educational Technologies & Services
With the Director, oversee a staff of 37 and a budget of $2.1 million. Work with Notre Dame faculty and staff to explore ways to effectively use technology with teaching and learning. Collaborate with Kaneb Center for Teaching and Learning on best practices for technology use. Explore grant opportunities for ETS projects.

Kaneb Center for Teaching and Learning (July 2000 – May 2003)
(Various Positions, including Acting Director)
Includes individual consultation with faculty on matters regarding the improvement of teaching, conducting workshops and seminars, serving on university committees related to teaching and learning issues, budget, and programming. Collaborate with faculty to explore ways to improve teaching and learning; conduct research related to the improvement of teaching and learning; conduct workshops relating to teaching with technology; coordinate Kaneb Center's on-line resources.

Office of Information Technologies (April 1990-July 2000)
February 1992 – July 2000
Educational Technology (Various Positions)
Provided assistance to faculty in identifying the appropriate technology tools to enhance teaching and learning, assistance to OIT staff in developing educational materials for their technology products, assistance in the design and development of educational facilities, and research related to the role of technology in teaching and learning.

PUBLICATIONS (Condensed)
Rodgers, M., Starrett, D., and Laughner, T. "The Sky is eFalling". *The National Teaching and Learning Forum.* (Volume 12, No. 5).
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PRESENTATIONS AND WORKSHOPS (Condensed)
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RESEARCH PROJECTS
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Building Community in On-line Courses: Studying the Institute for Church Life's Distance Education Project. (Fall 2002)
Assessing the Effectiveness of Faculty Development Centers. Collaborative project with Steve Ehrmann, TLT Group. (Fall 2002)