

THE RELATIONSHIP BETWEEN SOCIALIZATION, PERSISTENCE TO COMPLETE
CAMPUS OR ONLINE PROGRAM TYPE AND ONLINE PROGRAM FACTORS OF
COLLEGE OF AGRICULTURE MASTER'S STUDENTS

by

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Abstract

To investigate factors of academic and social integration as predictors of intention to persist for graduate students and differences in student's academic and social integration between campus based and online programs College of Agriculture Master's students in U.S. campus and online degree programs were surveyed. To investigate potential influences of differences, graduate College of Agriculture program directors were surveyed. Data was gathered using online questionnaires. The student questionnaire included demographics, as well as three scales, academic integration, social integration and intention to persist. Academic integration was measured with the subscales of advisor relationship and academic interaction. Social integration was measured with the subscales of peer group support, faculty interactions and involvement in social interactions. The subscales for each scale were combined to create academic integration, social integration and socialization scores. The director questionnaire included five questions designed to measure attitudes and design of online programs. Mean scores were formulated from descriptive statistics. Correlation and regression analysis were used to identify scale relationships. ANOVA, Mann-Whitney U and Tukey's HSD were conducted to identify program differences and to identify attitude and program format differences. A significant positive relationship between academic integration and social integration was identified as well as a significant positive relationship between academic and social integration and intention to persist. Significant differences were found between online and campus students, with campus students being higher on academic and social integration scales, but not on the intention to persist scale. Significant differences were also found on graduate director attitudes and types of communication used in the graduate online programs. This study indicates that socialization as explained through academic and social integration is an important factor of persistence in Masters Students, and that there are differences in integration of campus and online students. Strategies to improve socialization and completion include faculty/graduate student interactions and active graduate student clubs and for online students; communication components designed to increase meaningful interactions.

Table of Contents

List of Tables	vi
Acknowledgements	vii
Chapter 1 - Introduction	1
Statement of the Problem	4
Purpose of Research	5
Chapter 2 - Literature Review	7
Theory of Socialization and Social Identity	7
Graduate Retention.....	18
Online Learning	24
Definitions	25
References	27
Chapter 3 - The Role of Socialization in Persistence to Complete of College of Agriculture	
Master's Students.....	38
Title Page.....	39
Abstract.....	40
Introduction.....	41
Materials and Methods	43
Instrumentation	44
Overall measurement of integration	44
Intention to Persist Instrument	46
Sample	47
Data Collection.....	47
Data Analysis	49
Results	51
Discussion.....	53
Summary.....	56
Tables	57
Literature Cited.....	61

Chapter 4 - Relationships among Socialization, Online Program Design Factors, and Persistence to Complete in Campus or Online College of Agriculture Master’s Students	64
Title Page	65
Abstract.....	66
Introduction.....	67
Materials and Methods	71
Sample	71
Instrumentation	72
Overall measurement of integration	72
Intention to Persist Instrument	74
Graduate Director Instrument	74
Data Collection.....	76
Student Survey	76
Graduate Director Survey	78
Data Analysis	79
Student Data.....	79
Graduate Director Data.....	80
Results and Discussion.....	81
Demographics	81
Academic and Social Integration	81
Online Graduate Relationships	84
Types of Communication.....	84
Summary.....	86
Tables	88
Literature Cited.....	94
Chapter 5 - Thesis Conclusion.....	98
References	99
Appendix A - Graduate Student Survey.....	112
Opening Instructions	112
Academic Integration	112
Advisor Questions	112

Involvement in Academic Interactions	113
Social Integration	113
Peer Group Support	113
Interactions with Faculty	114
Involvement in Social Interactions	115
Intention to Complete.....	115
Personal Characteristics	115
Ending Statement	118
Closing Message	119
Appendix B - Graduate Director Survey.....	121
Opening Instructions:	121
Survey Questions	121
Closing Message	124

List of Tables

Table 3-1 Mean scores ^{z,y} for College of Agriculture Master’s Students for academic integration, social integration, and intention to persist; and advisor relationship, academic interactions, peer group support, faculty interactions, and social interactions.	57
Table 3-2 Regression matrix indicating the Binary Logistic Regression analysis ^z (dependent variable = High) between overall socialization scores and intention to persist scores.	58
Table 3-3 Demographic analysis of the overall sample of College of Agriculture masters students by program type, semesters enrolled, enrollment status, assistantship, number of hours working for pay, gender and amount of time expected to graduation.	59
Table 3-4 Binary Logistic Regression analysis ^z (dependent variable = > 40 hours) between age and hours worked.	60
Table 4-1 Matrix indicating mean scores ^{z,y} , standard deviations and ANOVA for academic integration scores, social integration scores and intention to persist scores by program type.	88
Table 4-2 Matrix indicating mean scores ^{z,y} , standard deviations and ANOVA for academic integration subscale scores for advisor construct, research interactions and non-research interactions.	89
Table 4-3 Matrix indicating mean scores ^{z,y} , standard deviations and ANOVA for social integration subscale scores for peer-group support, interactions with faculty and social interactions.	90
Table 4-4 Mann-Whitney U test ^z comparing mean rank responses among Student to Student interaction and relationship and Graduate Director/Instructor to Student interaction and relationship questions.	91
Table 4-5 Differences between mean responses (Tukey’s HSD ^{z,y}) on how often these components were used at the program level.	92
Table 4-6 Differences between mean responses (Tukey’s HSD ^{z,y}) on how often these components were used at the program course level.	93

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Chapter 1 - Introduction

Today, many universities are faced with challenges. One challenge in particular that has been studied recently is the retention rates of graduate students. The National Research Council reported that doctoral student retention rates are 57% across disciplines (Gravois, 2007); other projections are just as alarming, with the average attrition ranging from 40% all the way up to 70% (Bowen and Rudenstine, 1992; Noble, 1994, Tinto, 1993). At the high end, this can translate into only one out of every three students who are admitted completing their doctoral degree. Ott et al., (1984) also found that for master's student's retention rates after five years, which included students who graduated or who still had the ability to graduate averages at 57%.

Why is this important; isn't it just the process of sifting out the best and brightest from those who can't cut it? In a time when funding is becoming more limited, these attrition rates can come at a high cost to the institution, faculty and the students themselves. After studying 10 years of data from Notre Dame, there was no academic difference found (as measured through GRE's and GPA's) between students who completed their degrees and students who dropped out (Smallwood, 2004). This study also found that if attrition rates went down by just 10%, the university (Notre Dame) would save about 1-million dollars a year in stipends from going to students who do not graduate (Smallwood, 2004). As for the individual students, the cost of non-completion can be devastating. As Lovitts (2001) stated students who do not finish the degree often leave with a sense of personal failure they "...have to construct a new professional self-image and pursue a career and a lifestyle that is often far different from the one they had been envisioning. And they have to do this at a time when they are demoralized, broke and often deeply in debt (pg. 7)."

Another example of why graduate student retention is important comes in the form of The National Center for Public Policy and Higher Education (NCPPE) and programs like it. The NCPPE is an independent, nonprofit organization that, "promotes public policies that enhance Americans' opportunities to pursue and achieve high-quality education and training beyond high school" (National Center for Public Policy and Higher Education a, 2012). This organization

evaluates states and produces a state by state report card of higher education institutions that they call Measuring up. To produce this report card, six criteria were developed and used for evaluation. The six criteria included preparation for college; participation, which assesses the opportunities for residents of varying demographics to enroll in postsecondary education; affordability, which looks at the ability of those who attend college to pay for it; benefits, which are received by an educated population; learning, which looked at literacy and performance and finally completion, which looked at persistence and completion of degrees by college students (National Center for Public Policy and Higher Education b, 2008). According to the 2008 report card, 11 states received an “A”, 20 a “B”, 16 a grade of “C”, and 3 received either a “D” or “F” (National Center for Public Policy and Higher Education c, 2008). With this much emphasis being placed on using undergraduate student persistence and completion as an indicator of a successful state or institution, it seems to follow that graduate student persistence will receive similar attention soon.

An additional retention challenge universities now face involves retention in new online degree programs. In recent years, there has been a great increase in online learning. In 2006-2007, the National Center for Education Statistics reported that 66 percent of 2-year and 4-year institutions offered college-level distance education courses (U.S Department of Education, 2009). In 2012 that number grew to 86.6 percent (Allen and Seaman, 2013). There were also an estimated 20 million students enrolled in these distance education courses, out of which 6 million are taking at least one online course (Allen and Seaman, 2013). These courses have allowed many students to pursue educational degrees without being limited by their distance to a university (Card and Horton, 2000).

However, though there has been an increase in online learning, many sources report a higher drop rate for online courses as compared to traditional campus-based courses (Carr, 2000; Diaz, 2000). A difference has also been found between campus and online programs. Carr (2000) for example, found that the difference in student persistence in campus-based programs versus distance programs was 10-20%, though it was also found that there was a lot of variation in this persistence between institutions, with some reporting rates of 80% completion of online students and others reporting less than 50% completion. For both online courses and programs, Parker

(1995, 1999) found that some first attempts at adapting courses for distance learning had high dropout rates of 70-80% (Parker, 1995, 1999), and even many established programs expect a higher dropout rate than a corresponding campus course, at the rate of 11-15% higher in the distance course (Bos and Shami, 2006).

A more recent study looked at completion rates of students in two online graduate degree programs as compared to the campus-based delivery format of the same two programs (Patterson and McFadden, 2009). The online and campus-based programs were mostly identical; they were based in the same departments, and used the same professors, curriculum, assignments, technology and support services to control for intervening variables. The study found that the two campus-based programs had completion rates of 89% and 96%. In contrast, the online programs had completion rates of 43% and 76.5% respectively. This showed that students in the online programs were 6-7 times more likely to drop out or not complete the program than students who attended the campus-based program (Patterson and McFadden, 2009). There was no significant relationship found between students' GPA or admission test score and dropout. If there is no significant relationship between GPA and test scores of those graduate students who persist and those who drop out, what other factors are influencing graduate student retention? Tinto (1993) summed up this problem:

Given the importance of graduate education, it is surprising that so little research has been carried out on the process of graduate persistence, relative to the knowledge acquired from the extensive body of research on the process of undergraduate persistence (p.230).

Currently, concern for the level of persistence of graduate students is increasing among universities and those associated with higher education (Perro, 2007; Gardner, 2008; Golde and Dore, 2001; Hoskins and Goldberg, 2005). It is important that factors influencing graduate students' persistence be examined (Barnett, 2008). This problem needs to be addressed not only by a broad overview of graduate education, but also with a narrower focus in looking at the difference between disciplines (Tinto, 1993). Weideman, Twale, and Stein (2001) said, "No two graduate or professional programs are identical, and no two students experience graduate or professional school in quite the same way," (p. 2). They go on to explain that students in

humanities and the social sciences are held to different expectations than those that are, for example, in the natural sciences. Therefore, they argue, it is important to understand and recognize that graduate students experience different processes of socialization that reflect their fields and disciplines.

Because of the broad scope that research into this issue requires, all the levels of graduate students cannot be studied simultaneously. Tinto (1993) therefore recommended that this type of research be conducted systematically through examining and exploring factors related to this phenomenon by academic disciplines. Tinto indicated that this type of discipline specific study of student persistence and retention would allow for the discovery of possible reasons for differences between different departments, and that this would lead to a better and more complete understanding of the problem.

Statement of the Problem

Academic and social integration have been linked to graduate student retention and success (Church, 2009; Gardner, 2008, 2010; Tinto, 1993; Valero, 2001). However, none of these studies has truly explored factors relating to socialization or social integration and graduate student retention within colleges that focus on Agriculture or Master's students. Biglan (1973) studied the connectedness, commitment and output of faculty and department heads in 35 departments and found that differences between departments could be categorized by three overall patterns.

The first is the existence of an overall accepted core of problems and agreed upon methodologies. This can be divided into two types of sciences. Hard sciences are those disciplines which have an agreed upon body of theory, such as agriculture, engineering and mathematics. Soft sciences, on the other hand, are those disciplines which don't have a widely accepted body of theory such as accounting, business and education (Biglan, 1973).

The second overall pattern has to do with the concern with the practical application of the subject matter. This can be divided up into pure sciences and applied sciences. Pure sciences are those mostly concerned with theory. Some examples of these types of disciplines are anthropology,

music and philosophy. Applied sciences are disciplines concerned with applications to practical problems and include accounting, agriculture and education.

Finally, the last pattern concerns the level of involvement of the discipline with living organic objects of study. Life systems disciplines, such as biology, sociology and education, emphasize the study of living things. Non-life systems disciplines, such as chemistry, modern languages and business, study mostly inanimate objects (Biglan, 1973).

Through this we can infer that there is a link between how a field is organized and the experiences of the people who work in those fields (Hargens, 1975). Faculty, as students, are socialized to their fields and they develop behaviors that are pertinent to the field (Malaney, 1986). As an example, the types of quantitative and verbal skills that are preferred and needed vary depending on the field of study, and students develop those skills that are demanded. These varying demands in these fields of study would necessitate students and faculty that possess the suitable skills (Malaney, 1986). The process through which students learn these skills is socialization. This reasoning goes along with Weideman, Twale, and Stein (2001) who indicated that no two programs are identical and students do not experience their programs in the same way. They argue that studies that explore the experiences of graduate students within their fields of study will lead to the development of models of persistence. Many Horticulture and Agriculture programs would fall under the Hard-Applied-Life systems categories. Based on this kind of reasoning, most Agriculture college programs share enough underlying similarity that it would be useful to study them as a unit.

Most studies also have not looked at distance degree programs within the same department to see if student retention in those programs is similar, and whether or not distance students experience the same process of socialization or level of integration as students who are on campus.

Purpose of Research

Therefore the objectives of this study are to explore factors relating to academic and social integration and socialization of graduate students within Agriculture/Horticulture departments:

1. Is social integration a factor in retention and success with students who are in a College of Agriculture Masters program?
 - a. Do students who are more integrated indicate a higher intention to persist than students who are less integrated?
 - b. Are there differences in student's academic integration, social integration or intention to persist between campus based and online programs in the College of Agriculture?

2. If there are differences, as the literature suggests there are;
 - a. Is integration a factor that is being considered when designing an online course?
If so, what steps are taken in the design of the course to increase integration?

Chapter 2 - Literature Review

Theory of Socialization and Social Identity

There currently exist many models or theories of persistence that deal with undergraduates. However, theories and models regarding graduate student persistence are fewer (Barnett, 2008). Tinto (1993) offered a way to begin to think about how graduate student persistence could be studied by suggesting that it be based off of current theories of undergraduate persistence because "...recent research on doctoral persistence yields a number of findings that are quite similar to those at the undergraduate level" (p. 231). Therefore, this review will look at theories of undergraduate student persistence and use them to frame the concept of graduate student persistence.

Traditional theories of student retention and persistence emphasize many different individual student factors. Rose and Elton (1966) studied nine different personality characteristics; maladjustment, anxiety, dependency, hostility, tolerance and autonomy, suppression/repression, masculine role, scholarly orientation, and social introversion, and their effect on student persistence. They found that many of these personality traits could differentiate between students who persisted and were successful from those who dropped out or were on probation (Rose and Elton 1966).

Bean (1982), however, found that more direct factors, such as grades and attitudes, like loyalty, played a large part in student attrition. He argued that student attrition could be best understood through a combination of a turnover model from work organizations and a behavioral model that takes into account a person's intentions. It was found that intent to leave was the greatest contributor to student attrition despite the student's gender or confidence level. Variables such as loyalty to the school, grades, the perceived practical value of their education, goals, opportunity and family approval also contributed significantly to students' decisions to drop out, though the extent to which they contributed varied by student gender and confidence level (Bean, 1982).

The fact that it was found that intent to leave was the greatest contributor to student attrition is an important concept. Fishbein and Ajzen (1975) proposed a model that links intentions to behavior. According to this model, behavior comes about through interplay between a behavioral belief about what the consequences of the behavior would be and both normative beliefs about the behavior as well as subjective norms. A normative belief is one that is influenced by those who are significant in the life of the individual. For example, a person's belief about whether or not a college is a good one to go to could be influenced by whether or not that person's parents think it is a good college. A subjective norm is one based on what the individual perceives others think of his behaviors, such as whether or not he should attend college. These beliefs combine and interact to form intentions, and these intentions directly affect behavior and have been shown to be a predictor of departure from college (Bean 1982, 1990). Therefore, with regard to retention and student persistence, it is important that we look at things that may influence attitudes, behaviors and beliefs in students that culminate with the intention to either persist or drop out of their studies.

One such model with which to view these things is that of socialization. Socialization can have several different definitions and can be based off the concept of integration. According to Durkheim (1997/1951), integration occurred when individuals assimilated and shared concepts, values and beliefs. Socialization, therefore, can be looked at as the process that an individual goes through where they learn to adopt these values, beliefs, concepts and knowledge that are needful for membership in a group (Kuh and Whitt, 1988). It can also be looked at as the process through which students learn how to behave, and what it means to succeed or fail (Gardner, 2008). Weideman, Twale, and Stein (2001) said, "if entering graduate students are to succeed in their new environments, they must learn not only to cope with the academic demands, but also recognize values, attitudes, and subtle nuances reflected by faculty and peers in their academic programs" (p. 2). Eaton and Bean (1993) agreed, saying that, "Social and academic integration can be considered to be primary indicators of adjustment to the college environment" (p. 9). It can be theorized, then, that unsuccessful socialization can contribute to the decision to drop out of a degree program (Council of Graduate Schools 2004), especially because it can affect every part of a student's experience in a degree program.

The concept of socialization has its basis in Durkheim's theory of suicide. Durkheim (1997/1951) theorized that when a person shared values and beliefs with a group, or in other words, when a person is integrated with society, whether it is religiously, domestically or politically, they were less likely to commit suicide. On the opposite side, a society which forces an individual to rely on his own resources and which encourages a high state of individualism will have a greater suicide rate. Durkheim explained that the reason why is because the weaker the group an individual belongs to, the less the individual depends on that group and the more he depends on himself. This leads him to place his goals over the group's and to recognize no other rules of conduct than his own (Durkheim 1997/1951). However, when a group is integrated it,

“... forbids them to dispose willfully of themselves...the bond that unites them with the common cause attaches them to life and the lofty goal they envisage prevents their feeling personal troubles so deeply. There is, in short in a cohesive and animated society ... something like a mutual moral support, which instead of throwing the individual on his own resources, leads him to share in the collective energy and supports his own when exhausted (pp. 209-210)”.

This type of integration reduces likelihood of individuals separating themselves from the group. Spady (1970) used this theory to explain why students would withdraw from college, arguing that students withdrawing from college and individuals withdrawing from society would do so for the same reasons. In particular, this analogy applied to one type of suicide defined by Durkheim (1997/1951) as egotistic suicide. Egotistic suicide was theorized to occur when an individual was not integrated into a society and, therefore, either had values that were very divergent from the group, or had insufficient interaction with other members of the group. Either way, this type of suicide could be reduced by individuals developing strong commitments to the group.

In addition, Durkheim's (1997/1951) process of integration comprised both intellectual and social components. Spady (1970) adopted these components and modified them for students' experiences. The first component, intellectual integration, Spady (1970) called normative congruence. This component had to do with experiencing congruence between students, their

expectations, and the educational environment. Students whose expectations, attitudes and values were compatible with the dominant norms of the college environment would not only feel more identification with the college, but would also be more likely to develop relationships, experience academic success and feel more integrated with campus life (Spady, 1970). This, in turn, helps to establish shared group values, which then influences and develops intellectual membership. This intellectual membership would then lead to higher social integration of the student.

Spady (1970) also looked at two different social aspects of college life. The first was called friendship support. This component occurred as students developed close relationships with other peers in the educational environment. The second aspect was social integration, which looked at seeing if there was any pressure because of any normative differences between the students and others at the university which would detract from a sense of belonging at the university. It also looked at interpersonal relationships. This social integration, along with friendship support, was theorized to lead to greater satisfaction in the student, which in turn influenced institutional commitment and the decision to persist (Spady, 1970).

Tinto (1975) took Spady's model and built upon it, saying that students who lacked interactions with others at the college or who had value patterns that didn't align with those of the college would have a low commitment to the social system that is the college and would be more likely to leave, and that this process was a longitudinal process. Tinto (1975) also separated between normative or academic integration and social integration.

Academic integration was theorized to come from two components which could be called grade performance and intellectual development. Grade performance reflected an ability to meet the standards of the academic system and prevented dropout through academic dismissal.

Intellectual development is more intrinsic and involves a student valuing their education as a process of development in which they gained knowledge and ideas. Tinto (1975) pointed out that intellectual development is the student's evaluation of the educational system, whereas grade performance reflects the fact that a student is being evaluated by that same system and that the outcome will both be based on the student's ability and the system's preference for specific types

of academic behavior. The decision to drop out, then, is a “coping” response to a lack of fit between the student and the system, and stems from, “either insufficient intellectual development or insufficient congruency between the intellectual development of the individual and the normative climate of the academic systems (p. 106)”.

Where Spady (1970) theorized that this intellectual development leads to social integration, which in turn leads to satisfaction and institutional commitment, Tinto (1975) separated it out and argued that instead of it leading to institutional commitment, it instead lead to academic integration, which, in turn, influenced the goal commitments of the student, and through that, the decision of whether to persist or drop out.

Tinto’s (1975) second component, like Spady’s (1970), was social integration, which involved the interaction between the student, who has various characteristics, such as values and goals; and other people at the college, who also have varying characteristics. Like academic integration, there are varying levels to which a student could be integrated and there are degrees of congruency between students and their environment. Social integration stems from things like extracurricular activities, informal dealings with their peer group and interactions with faculty and staff. When these activities are successful, they will help a student develop friendships, support, affiliation and channels of communication (Tinto, 1975). In fact, Spady (1971) found that as long as a student perceives they have good amounts of social interaction, they are more likely to persist.

As mentioned above, it is not only interactions with other peer group members that are important. Interaction with faculty is also related to increased amounts of social integration and therefore persistence (Tinto, 1975). In fact, interaction with faculty members not only helps with student’s social integration and institutional commitment, but also helps a student become more academically integrated. This, however, appears to be more important between students and faculty that are in the student's major area, possibly because of shared interests, as well as the impact of the relationship on the student's future occupation (Tinto, 1975).

It is important to realize that both of these components are influential in determining whether or not a student will persist. It is possible that a student may be able to become integrated in one domain without becoming integrated in the other and that lack of integration in one of the domains could still lead to student withdrawal.

While this model offers a good framework for student persistence or attrition, it neglects to take into account individual characteristics that can contribute to the decision to persist (Eaton and Bean, 1995). Weidman (1989) argued that persistence research that is based on a sociological perspective will focus more on the process and perhaps not take into account the individual that is undergoing the process. Keeping this in mind, several studies have since built on to Tinto's (1975) model and added various components (Eaton and Bean, 1995; Peterson, 1993; Stage, 1989).

The first of these components involves students' locus of control. Locus of control can be viewed as the extent to which an individual believes that outcomes, such as course grades, can be attributed to internal or external forces (Weiner, 1986). Students who have an internal locus of control believe that they are the cause of their success or failure, and that it is up to them to take action, assume responsibility and get good grades (Bean and Eaton 2002; Grimes, 1997; Skidmore, 2002). These students link studying and attending class with academic achievement. On the other hand, students with an external locus of control believe that their success or failure depends on things that are outside of their control, such as whether or not the teacher likes you. These students are not as likely to put as much effort into learning because they believe that whether they get a good grade depends on luck, or others who have power, not effort (Grimes, 1997; Skidmore, 2002; Bean and Eaton, 2002).

Several studies have demonstrated a link between locus of control and academic success. Grimes (1997) found that students who were college-ready demonstrated a more internal locus of control. Kanoy et al. (1989) found that students who took personal responsibility for their success in college performed better in the classroom. Overwalle et al. (1995) and Yan and Gaier (1994) both found that students who had an internal locus of control were more likely to be academically successful. Senecal et al. (1995) also found that students who were motivated by

internal factors, factors that are under the student's control, were less likely to procrastinate, which was consistent with other findings suggesting that this type of motivation is associated with more persistence and less negative emotions.

On the other hand, Grimes (1997) found that students who were underprepared for college demonstrated a more external locus of control, signifying that those students felt less control and less responsibility for their actions and also likely felt higher levels of anxiety. Reynolds and Weigand (2010) also found that the students who thought that their environment was the result of something that they could not control had a lower ability to cope, through academic and social integration, with the demands of college. This external locus of control was also negatively correlated with their self-efficacy and their attitudes toward the environment at the university. These negative attitudes toward the university environment can indicate decreased academic and social integration, which in turn contributes to students deciding not to persist in college.

Another component studied with regards to Tinto's (1975) theory was motivation. Stage (1989) studied three groups of students categorized according to the reason they were attending college. These three groups were the certification group, cognitive group and community service group. The certification group specified that their reason for attending college was practical, such as to earn a degree or get a job. The cognitive group's reasons for attending college were primarily to learn or gain knowledge for its own sake. The third group of students, the community service group, comprised of students who were attending college in order to prepare them to help others through things such as community service (Stage, 1989).

When these three groups of students were studied, it was found that for all three groups, institutional commitment affected persistence and was significantly related to later institutional commitment as well as social integration, especially for women. However, there were some differences between the groups. For two of the subgroups, the certification and the cognitive group, academic integration had a positive and significant effect on persistence. In contrast, social integration was found to be significantly related to institutional commitment only in the community service group. It was also found that older students were more likely to have higher levels of institutional commitment when they entered the college (Stage, 1989). Overall, the

group that followed Tinto's model the closest was the community service group, the group that was there in order to learn how to help others. In this group, academic integration through goal commitment and social integration through institutional commitment significantly influenced persistence. The results of this study suggested that though Tinto's model provides a very general overview of student persistence, factors such as an individual's motivations for attending college may influence the degree to which commitment influences a student's decision to persist (Stage, 1989).

Many studies have also found an effect of confidence on persistence. For example, Bean (1982) found that grades impacted women with low confidence to decide to drop out more than women who had high confidence. For low confidence men intent to leave and grades had equal though opposite effects on decisions to drop out, with intent to leave having a positive relationship and grades a negative one. Bean (1982) suggested that it is important to help students develop the learning skills needed so their grades could rise.

Another component was self-efficacy. Bandura (1997) mentions that for academic performance, the impact of self-efficacy involves the, "belief in one's efficacy to fulfill academic demands, to exercise control over intrusive thinking, to ameliorate experienced distress and to regulate one's study activities" (p. 236).

Chartrand et al., (1992), as well as Bandura (1997), found associations between self-efficacy and academic achievement. Bandura (1997) mentions that a low sense of self-efficacy in managing the stress and demands of college can be accompanied by high levels of stress and anxiety.

Within the framework of Tinto's (1975) model, Peterson (1993) explored the link between underprepared college students and their perceived career decision-making self-efficacy and academic and social integration. Specifically of importance were the questions about the relationship between students' perceived career decision-making self-efficacy and their goals and commitments as well their academic and social integration. Did self-efficacy explain variance in either integration?

To answer these questions, 678 underprepared (as determined by high school GPA, percentile rank, and ACT scores), students were divided up into three groups: those who had continuously attended college, those who had one quarter of interruption and those who had two or more quarters of interruption in their attendance. These students were then surveyed. It was found that career decision-making self-efficacy was correlated with both goals and commitments and overall integration, and that it had a stronger correlation with academic integration than social integration. With regards to overall integration, self-efficacy, along with initial goals and commitments and intention to persist explained 27.8% of the variance, and the difference was significant. It can be said, therefore, that career decision-making self-efficacy was an important component in explaining integration (Peterson, 1993).

It is of interest to note in this study that the strength of the correlation between career decision-making self-efficacy varied according to the age of the student. Specifically, the correlations were greater and stronger when the students were older, which showed that career decision-making self-efficacy may be more important for older, nontraditional students than for new traditional incoming freshman (Peterson, 1993).

Eaton and Bean (1995) added the additional component of coping behavior. They defined coping as, “the sum of behaviors an individual used to achieve academic and social integration” (p 619). To further clarify, when an individual’s environment or situation changes, it can create stress. In an attempt to reduce or overcome this new stress, an individual will make choices in his behavior which are called coping behaviors. These behaviors usually take one of two general forms: either it is an approach behavior or an avoidance behavior. An approach behavior is one where the behavior actively moves toward the stressor. This means that an individual using these behaviors reduces stress through gaining information about the stressor and then taking action to reduce it. On the other hand, avoidance behaviors are those that are used by an individual to avoid feeling stress. Some examples of these behaviors in a college setting would be not going to class or not meeting with a professor when there are questions. Avoidance behaviors are not all passive, active behaviors such as leaving campus for the weekend and going home in order to avoid social interaction also fall under this category (Eaton and Bean, 1995). It

is important to note, though, that these behaviors arise from different motivations and that individuals do not exclusively use only one of the behaviors.

Eaton and Bean (1995) theorized that the use of these behaviors allows an individual to adjust or create a “goodness of fit” with their environment, which allows an individual to adapt to an environment. Within the college environment, both academic and social integration are identified as measures of adaptation (Bean 1982, Tinto, 1975), and coping behaviors are the ways an individual achieves academic and social integration (Eaton and Bean, 1995). They tested this theory through a survey of 262 undergraduate students. They found that academic integration and social integration had statistically significant relationships with intent to leave. This shows that students who are successful at adapting to both the academic and social environments, as well as students who perceive they are successfully integrated are more likely to persist in college.

In looking at variables related to social integration, both formal and informal approach behaviors were positively and significantly related to a student’s social integration. Avoidance behaviors, on the other hand, were negatively correlated to social integration. This shows that on one hand, students who were involved with friendships and formal social involvement activities were more likely to feel socially integrated. On the other hand, students who avoided social interaction were less likely to feel socially integrated (Eaton and Bean, 1995).

Findings for academic integration were similar in that approach behaviors were positively related to academic integration and avoidance behaviors were negatively related to academic integration (Eaton and Bean, 1995). In other words, students who took initiative and accepted responsibility felt more academically satisfied, while those who avoided academic work were unsatisfied (Eaton and Bean, 1995). This study also found an interesting relationship between behaviors, social integration and academic integration. Specifically, if the social behavior was formal, such as being involved with leadership on campus, students were more likely to feel academically integrated. However, if the behavior was informal, such as attending parties with friends, students were less likely to feel academically integrated. Thus, it is possible that students may feel socially integrated, but not academically. Further, this informal social involvement may

help students avoid the academic environment, thus leading to academic mal-adaption (Eaton and Bean, 1995).

In summary, Eaton and Bean (1995) found that the type of coping behavior students used (approach/avoidance) had significant effects on both academic and social integration. It can be said, then, that students who cope well with the new challenges of college reduce stress and are likely to gain a perception of academic and social integration, therefore, they are more likely to persist through their college career (Bean and Eaton 2000).

To tie many of these theories together, Bean (2000) suggested a model that included psychological theories that explain the sociological model. Bean (2000) theorized that past behavior and beliefs affect how a student interacts with the college environment. The college environment will contain various types of interactions, such as interactions with other students, academic work and community interactions, that a student will have to respond to. As a student interacts and reacts with the college environment, he will then experience certain psychological outcomes and create assessments of how he should respond in the future. For example, encounters with stressful situations in the past will have an influence on how a student copes to reduce stress. Situations that were similar to the ones a student encounters at college will influence how a student responds to these new stressors. If a student found that using approach behaviors in response to academic demands in high school reduced his stress, he will likely use the same behavior in college. If it is a successful behavior in college at reducing stress, a student is likely to assess that they should continue using the behavior (Bean, 2000).

Another example is with self-efficacy. Students will have past perceptions of their self-efficacy for various activities, such as social interactions. A student may start with low self-efficacy for interacting socially when he starts college, but if he participates successfully in social activities on campus, he may reassess his self-efficacy and decide he can interact socially (Bean, 2000).

Through these and factors such as student's locus of control and motivation, students will assess whether or not they are confident, in control of their environment and can reduce their stress. If students decide positively in those regards, for example if they decide they have a positive self-

efficacy for social interactions, then this leads them to a feeling of integration, which in turn helps them to decide to continue being successful, or in other words, persist, in that environment (Bean, 2000).

Graduate Retention

The above theories provide a basis for which to examine graduate student persistence. Tinto (1993) theorizes that research done on graduate student persistence yield similar findings as those done on undergraduate students. Specifically Tinto, (1993) suggests that interactions between students and faculty at a university also shape student development through socialization, and, ultimately, their persistence at a university. However, there are differences that need to be considered when examining graduate education.

First, the communities which are likely to have the most impact on graduate students are more local. Instead of the university community having the most impact on student's persistence, it is more likely that persistence will be influenced by the characteristics of a field of study (Tinto, 1993). Thus, the pattern of persistence will be more similar among the same field of study across institutions than among different fields at the same university (Zwick, 1991).

Additionally, social integration is much more closely tied to academic integration at the graduate level than the undergraduate level (Tinto, 1993). Students' social interactions with both peers and faculty are closely linked with students' intellectual development, as well as the development of the skills and knowledge necessary to complete the degree. Social membership in a program becomes part of a student's academic membership in the program with which a student is involved and, ultimately, the field the student is going to become a part of (Tinto, 1993).

Another difference that might be considered is the goal of the process of socialization. According to Baird (1992) and Rosen and Bates (1967), the goal of graduate student socialization is to take a raw scholar and turn him into an academic professional. This is achieved through instilling within him a large amount of specialized knowledge, while at the same time socializing them to the norms, values, ways of thinking and modes of discourse (Lovitts 1996).

Finally, the effect that the community has on the graduate student changes over time (Tinto, 1993). As an example, Tinto (1993) mentioned that for a doctoral student, persistence in the later part of the degree, which involves mostly research, is likely to be influenced by a single faculty member or a small group of faculty members. This is not so much the case in the beginning stages of a doctoral student's degree.

Because of this factor of change during a graduate student's degree, Tinto (1993) theorized that there were three stages in the process of graduate student persistence. Specifically looked at were stages for doctoral degree completion. The first stage was the transition stage. This stage started at entry into the degree program and typically lasted for a year. During this time, students seek membership into the group and go from being an outsider to an insider. This stage is influenced by formal and informal social and academic interactions. Students in this stage also have to judge whether the program is relevant to their goals and expectations. Students must adapt to these expectations and norms, and often these expectations are not congruent with their past expectations, independence, roles and responsibilities (Egan, 1989). The sense students make of these expectations and the feelings of congruence and commitment, or dissimilarity and alienation, influence students' decisions of whether or not to persist in this stage (Lovitts, 1996). Bowen and Rudenstine (1992) found that 13% of students left during this stage of their program.

Tinto's (1993) second stage was the acquisition of knowledge. This stage picks up after the first year and continues until candidacy. It involves completing the requirements for a PhD, aside from a dissertation. During this stage, interactions relating to gaining academic aptitude are central. Also, because student's academic and social experiences are localized in a department, interactions become intertwined and the line between social and academic integration becomes blurred. Interactions with faculty and peers are linked to a student's intellectual development. There are several additional studies that support Tinto's theory that social interactions with both peers and faculty which are academic in nature are linked with student persistence (Baird, 1992; Rosen and Bates, 1967; Weiss, 1981). Weiss (1981) found that the more faculty members a student knows professionally, the more likely a student is to have increased productivity, involvement in the degree program, commitment and self-concept. Also, Weiss (1981) found that out of all these relationships, the student-advisor relationship had the most critical role in a

student's persistence and commitment. As for persistence in this stage, Bowen and Rudenstine (1992) found that 17% of the students who made it past the first stage dropped out during this stage. This brings total pre-candidacy attrition to 30%.

Tinto's (1993) final stage was the research stage. This stage occurs after candidacy and lasts until the completion of the dissertation project and the defense of the dissertation. Persistence at this stage is theorized to be idiosyncratic because it reflects the role of an individual faculty member, or a small group of faculty members and individual abilities (Tinto, 1993). It is also during this stage that the support of external communities, such as family or work, becomes important. For this stage, it is estimated that somewhere between 15 and 25% of students never complete the dissertation (Lovitts 1996).

Lovitts (1996) agreed with these stages for the most part, however, she theorized that students' prior views and socialization experiences regarding graduate education would have implications for how students dealt with and reacted to graduate school. Thus Lovitts (1996) included an additional stage to the three mentioned above. This stage was called stage zero and involved prior and anticipatory socialization. As an example of how prior viewpoints may affect how students react, Egan (1989) found that high school seniors had an overly impressionistic view of faculty members and how graduate school worked. These impressionistic views lead to over-idealization of the graduate school experience and led to eventual disenchantment. Egan (1989) also found that students think that graduate school will be a continuation of what they experienced as undergraduates and that they expect a supportive atmosphere in which professors and faculty members help guide them in developing their abilities. On the other hand, graduate programs have expectations of what entering students have already experienced (Lovitts 1996). This includes experiences such as prerequisites, skills, and socialization to norms and values of graduate training. The problem is that many students do not begin their programs with expectations that match the school's (Green 1991).

Lovitts (1996) also discussed the importance of taking into consideration students' socio-emotional reactions to graduate school. She mentioned findings that over half of graduate students in their first and second year of graduate school tested in the life-crisis category on the

social readjustment scale; one third of graduate students are lonely, and many experience feelings of helplessness, anxiety and low self-esteem. Halleck (1976) found that graduate students are some of the most frequent users of university psychiatric services, being surpassed only by college freshman. Looking back at Bean (2000), factors such as anxiety and self-efficacy help students assess whether they are confident, in control of their environment and can reduce their stress. If they decide negatively, this may lead to low feelings of integration and the decision not to persist (Bean, 2000).

Also, referring back to Durkeim (1997/1951), a society which forces an individual to rely on his own resources and which encourages a high state of individualism will have a greater suicide rate. If students are separated from each other and from faculty, they cannot find the emotional support they need, they also cannot figure out how the system is supposed to work and they cannot voice their concerns (Lovitts 1996). This throws students onto their own resources. Integration through socialization helps bind people to each other and their communities through an exchange of ideas, impressions and feelings (Lovitts 1996).

Gardner (2010) agreed with Tinto (1993) that the process of socialization for graduate students goes through three stages. However, Gardner (2010) combined Lovitts (1996) stage zero and Tinto's (1993) first stage saying that the first stage occurs both before the program begins and within the first few months of starting the program. It consists of experiences before graduate school begins, such as meeting with faculty members, staff and graduate students, and forms the basis of the student's experience. The second stage is similar to Tinto's (1993) and Lovitts (1996) and picks up after the first few months of the program and lasts through the onset of candidacy status. This phase includes gaining knowledge, becoming socially integrated with the department and passing through the requirements that lead to candidacy. The final phase includes looking to the future, including writing a dissertation and looking for jobs, and is when a student's relationships develop so that they are more professionally oriented, as opposed to student oriented.

Gardner (2007, 2010) added to these stages five themes that described this process: ambiguity, balance, independence or self-direction, development, and support. The components of these

themes can change depending on the phase of graduate school the student is in, however, the themes themselves stay pretty constant.

The first of these themes, ambiguity, involved uncertainty and a lack of clarity about where they were going, how they were going to get there, and what was waiting for them. This ambiguity can revolve around program requirements and expectations for students in their earlier years, and around research and job markets in the later years (Gardner, 2007). Many students mentioned that guidelines, regulations and paperwork for graduate school could be particularly ambiguous, especially when it comes to figuring out what needs to go where and when and who needs to sign it (Gardner, 2010). Ambiguity also occurred in the transitions between stages, such as when students are beginning their program or figuring out their research (Gardner, 2007).

The second theme of balance involved students learning how to balance their responsibilities and duties. Students earlier in their programs often need to figure out how to balance teaching duties with their own class work, as well as finding time for research and balancing all this with their responsibilities outside of school. Students in their later years face the need to finish graduate requirements, complete experiments and gain and respond to feedback from advisors (Gardner, 2007).

Independence, or self-direction, dealt with students figuring out how much independence is good, and how much is too much (Gardner, 2007, 2010). This theme is very common among students who are further in their program and often revolves around student's relationship with their advisor (Gardner, 2007). A history student in Gardner's (2007) study demonstrates this concept well "If someone holds your hand too much you'll never learn to think for yourself and if someone doesn't hold your hand enough you'll fall flat on your face" (p. 734). Students discuss this concept in terms of both being allowed freedom and feeling lost and many struggle to find the right balance of both (Gardner, 2007, 2010).

Development, the fourth of Gardner's (2007, 2008, 2010) themes has components in common with academic socialization in that it involves gaining the skills and dispositions that are needed for a future job. Development can center on student's taking an active role in their studies as

well as gaining skills and dispositions needed to be able to successfully perform a career in their field (Gardner, 2007). Interactions with faculty members are important in this theme as they are the ones who initiate much of the development, and also because students watch how faculty interact with each other in order to learn the norms of their field (Gardner, 2007).

Gardner's final theme was support. Support involves connections and relationships students gain (Gardner, 2007). This support originates from two main sources, faculty and peers. Faculty support was important to all students both in the amount they were able to interact as well as the frequency (Gardner, 2007). This support often centered around a student's advisor, and many students mentioned that having support from their advisor was more important to them than having someone who was an expert in their area. Peer support was also very important to students, sometimes more important than faculty support (Gardner, 2007). The exception to this was students in departments with high percentages of international students. In these departments students were more likely to mention support from faculty as being more important (Gardner, 2010). For most students peer support came from students in their program (Gardner, 2010). Peer support was important for students in all stages of their program. Beginning students mentioned peer support as what got them through the beginning of their program, and students who were further along mentioned peer support as a way of gaining a clear picture of what is expected of you (Gardner, 2007). This finding is not surprising considering the evidence that support is important in the processes of both social and academic socialization (Lovitts, 1996; Tinto, 1993; Spady 1971).

Through these studies we can conclude that though the underlying importance of academic and social integration on persistence is similar for graduate and undergraduate students, there are many differences as well. These differences include such things as the goal of the socialization process (Baird, 1992; Lovitts, 1996; Rosen and Bates, 1967), the communities that have the most impact (Tinto, 1993; Zwick, 1991), and the interrelation between social integration and academic integration (Tinto, 1993). Tinto (1993), Lovitts (1996) and Gardner (2007, 2010) also identified several stages of the socialization process not identified in undergraduate research, and Gardner (2008, 2010) described themes that described what students go through during these stages. These give us an idea of what a traditional doctoral graduate student's experience is.

However, there is much less known about these components at a master's degree level. Ott et al. (1984) did investigate some variables for master's degree student retention that are related to social and academic integration. Their study focused on the variables of sex, race, visa status, age, and registration status (full or part time student), which are all variables that may have an effect on social integration. Registration status can also be seen as a gauge of a student's goal commitment, which in turn can affect academic integration. They also examined academic division as a variable to see if there was a difference between communities that had an impact on retention. This study found that retention rates did not differ by academic division alone, but that there was a trend that within the Division of Agricultural and Life Sciences, full time students were more likely to be retained than part-time students. It was also found that overall; the retention rates were higher for full time students than part time students.

None of the other variables, race, visa status, sex or division interaction was significant at the master's degree level. The study suggests that for a master's student, full time status, as opposed to part time may be an indication of a student's goal commitment, which would influence academic integration, or could result in more social integration as the student is more likely to spend time with other faculty, staff and students. As mentioned above, because social integration is likely to be linked with academic integration for a graduate student, any factor that decreases social integration likely has an effect on academic integration as well.

Online Learning

As mentioned above, a new trend in education is the development of online courses. Included in this trend is the development of distance graduate education programs. With this increase in online programs come some difficulties, especially within specific fields.

Rieger (2002) mentioned that the nature of agriculture education, with its abundance of hands-on-learning and its visual content, may not transfer well to distance education. Moskal and Dziuban (2001) found that online courses had higher withdrawal rates than other types of courses. Another difficulty that students may face concerns the fact that the online environment can provide a more diverse group of students from a wide array of locations and with different

backgrounds (Cassiani, 2001). This can contribute to a lack of interaction, and this lack of interaction, along with a deficiency of hands-on experience, may make students feel isolated (Paul and Brindley, 1996). Compounding this problem is the fact that one study found that though in some courses students created a supportive environment with their teachers and other students, the environment lasted only through that particular class, or in some cases, particular activity, and any social integration achieved was transitory (Ivankova and Stick, 2007). As discussed above, factors such as relationships between students and their committees, advisors and peers are important characteristics that influence the process of socialization and integration and ultimately students' satisfaction and persistence. With this being said, the question is: does this online environment have effects on student's satisfaction and persistence through hindering the processes of socialization and integration?

In conclusion, academic and social integration have been linked to graduate student retention and success (Church, 2009; Gardner, 2008, 2010; Tinto, 1993; Valero, 2001). However, none of these studies has truly explored factors relating to socialization or social integration and graduate student retention within colleges that focus on Agriculture. Most studies also have not examined whether or not distance students experience the same levels of socialization or integration as students who are on campus. This will be the focus of this study.

Definitions

Ambiguity: The quality or state of being ambiguous (doubtful or uncertain) especially in meaning (Ambiguity, 2011). For students this involves feelings of uncertainty, and an overall a lack of clarity, with what they were doing, where they were going, and what was awaiting them (Gardner, 2007, 2010).

Balance: Mental and emotional steadiness (Balance, 2011). Relating to this study balance can be seen as students trying to figure out how to fulfill all their duties and responsibilities in their life (Gardner, 2007).

Connection: An association or relationship (Connection, 2011). In this study connection refers to the associations and relationships students have as well as involvement with their overall department.

Development: The act, process, or result of developing (Development, 2011) or as defined by Gardner (2007, 2010) the act of transitioning between roles and expectations as well as gaining in skill and understanding.

Independence: The quality or state of being independent (not requiring or relying on something else) (Independence, 2011). For this study independence refers to students becoming self dependent professionals.

Involvement: A component of connection, involvement refers to the investment of students in their program, departments, both physical and psychological (Astin, 1984).

Integration: Occurs when individuals assimilate and share concepts, values and beliefs (Durkheim 1997/1951). In the academic setting it refers to the levels of success students have infusing themselves into academic norms of their particular institutions, departments, and fields of study (Barnett, 2008).

Interaction: The activity of being with and talking to other people and the way that people react to each other (Interaction, 2011).

Socialization: The process students go through to learn to adopt the values, beliefs concepts and knowledge that are needful for membership in a group and become socially and academically integrated (Kuh and Whitt, 1988). It can also be looked at as the process through which students learn how to behave, and what it means to succeed or fail (Gardner, 2008).

Support: To assist or help (Support, 2011). In this study support can be thought of as the assistance or lack of that students receive from people in their lives. Examples are faculty, other students, advisors and family.

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Chapter 3 - The Role of Socialization in Persistence to Complete of College of Agriculture Master's Students

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Title Page

The Role of Socialization in Persistence to Complete of College of Agriculture Master's
Students

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Abstract

To investigate factors relating to academic and social integration as predictors of intention to persist for graduate students, College of Agriculture Master's students in U.S. campus and online degree programs were surveyed. Data were gathered using an online questionnaire. In addition to demographics, the questionnaire included three scales, academic integration, social integration and intention to persist. Academic integration was measured with the subscales of advisor relationship and academic interaction. Social integration was measured with the subscales of peer group support, faculty interactions and involvement in social interactions. The subscales for each scale were combined to create academic integration, social integration and socialization scores. Mean scores were formulated from descriptive statistics. Polychoric correlation was used to identify relationships followed by regression analysis with academic and social integration as predictor variables and intention to persist as the criteria variable. A significant positive relationship between academic integration and social integration was identified. A significant positive relationship was also identified between academic integration and social integration and intention to persist. Demographic variables were examined in relationship to the scales. Overall this study indicates that socialization as explained through academic and social integration is an important factor of persistence in College of Agriculture Masters Students.

Introduction

One challenge many universities are facing today is graduate student retention. The National Research Council reported that doctoral student retention rates are 57% across disciplines (Gravois, 2007). Ott et al., (1984) also found that for master's student's retention rates after five years, which included students who graduated or who still had the ability to graduate averages at 57%. These attrition rates can come at a high cost to the institution.

After studying 10 years of data, Smallwood (2004) found that there was no academic difference (as measured through GRE's and GPA's) between students who completed their degrees and students who dropped out. What, then, is the difference between students who persist and those who drop out? Theories and models regarding graduate student persistence are fewer than those dealing with undergraduates (Barnett, 2008). Tinto (1993) suggested that graduate student persistence could be studied by basing it off of current theories of undergraduate persistence.

One such model is that of socialization. Socialization is the process through which students learn how to behave, and what it means to succeed or fail (Gardner, 2008). Socialization can be divided into two different constructs, academic integration and social integration. Social integration involves interpersonal relationships, support, interactions with others, and a sense of belonging at a university (Spady, 1970; Tinto, 1975). Social integration stems from extracurricular activities, informal dealings with peer groups and interactions with faculty and staff (Tinto, 1975). When these activities are successful, they will help a student develop friendships, support, affiliation and channels of communication (Tinto, 1975). Eaton and Bean

(1993) theorized that, "Social and academic integration can be considered to be primary indicators of adjustment to the college environment" (p. 9).

Academic integration is described through grade performance and intellectual development. Grade performance reflects an ability to meet the standards of the academic system; intellectual development involves a student valuing their education as a process of development in which they gain knowledge and ideas (Tinto, 1975). Academic integration is key because it involves students becoming integrated into the academic system that will allow them to achieve their goal of becoming professionals in their disciplines (Lovitts, 1996).

The above models provide a basis for which to examine graduate student persistence. However, there are differences that need to be considered when examining graduate education versus undergraduate education.

First, persistence is likely to be influenced by the characteristics of a field of study (Tinto, 1993). Therefore, the pattern of persistence will be more similar among the same field of study across institutions than among different fields at the same university (Zwick, 1991). Also, social integration is much more closely tied to academic integration at the graduate level (Tinto, 1993). Students' social interactions with peers and faculty are closely linked with students' intellectual development. Social membership becomes part of a student's academic membership and, ultimately, membership in the student's field (Tinto, 1993). Additionally, the goal of the process of socialization is different. According to Baird (1992) and Rosen and Bates (1967), the goal of graduate school is to take a raw scholar and turn him into an academic professional. This is

achieved through instilling within him a large amount of specialized knowledge, while at the same time socializing him to the norms, values, ways of thinking and modes of discourse (Lovitts, 1996). Finally, the effect of the community changes over time (Tinto, 1993). For example, Tinto (1993) describes that for a doctoral student, persistence in the later part of the degree, which involves mostly research, is likely to be influenced by a single faculty member or a small group of faculty members. This is not so much the case in the beginning stages of a doctoral student's degree.

Academic and social integration have been linked to graduate student retention and success (Church, 2008; Gardner, 2008, 2010; Tinto, 1993; Valero, 2001). However, none of these studies has truly explored factors relating to socialization or social integration and graduate student retention within colleges that focus on Agriculture. Therefore the objectives of this study were to explore factors relating to academic and social integration of graduate students: specifically, do these constructs that are shown to explain persistence in undergraduate and Ph. D. students also explain persistence in College of Agriculture Masters Students?

Materials and Methods

For this study a survey method was used to collect data using a questionnaire type instrument. The questionnaire was given to Master's students from various U.S universities. Students were surveyed using an online format of the questionnaire in Axio Survey (Axio Learning, Manhattan, KS). The Kansas State University Institutional Review Board approved the study protocol and all participants gave informed consent prior to participation in the study.

Instrumentation

Overall measurement of integration

The first subscale contained questions relating to student's academic integration. Lovitts (1996) identified that academic integration was influenced by participation in academic events and activities. Also having an advisor as well as the quality of a student's relationship with their advisor is critical in completing graduate school (Baird 1992; Lovitts, 1996; Rosen and Bates 1967). Therefore the two variables included in measuring academic integration were advisor relationship and academic participation. A mean score of the two variables was calculated to create an academic integration score.

The advisor relationship variable consisted of eight questions. The first, do you have an advisor consisted of a yes or no response. The remainder of the questions measured the quality of the relationship between the student and their advisor. These included questions such as: "my advisor advises me effectively", and "my relationship with my advisor has had a positive influence on my intellectual growth". They were adapted from Sorokosh (2004) and Little (2009) and had reported Cronbach's alpha reliability ranging from .81 to .96. Cronbach's alpha is a measure of internal consistency for a set of related items. A reliability coefficient of .70 or higher is considered acceptable in most social science research situations. The responses were based on a six point Likert type scale measuring extent of agreement with each statement.

The participation in academic interactions variable contained seven questions designed to measure the frequency students participated in academically focused interactions with others. The questions were adapted from Cardenas' (2005) questionnaire designed to measure doctoral student involvement. Some of the interactions asked about were "attended professional conferences or meetings" and "attended research seminars in yours or others disciplines". The reported overall Cronbach's alpha reliability of the instrument was .93. The responses were based on a six point scale, asking how often they have done various interactions.

The second subscale of the instrument contained questions relating to social integration. The three variables included in measuring social integration were peer group support, faculty interactions, and involvement in social interactions. A mean score of the three variables was calculated to create a social integration score.

The peer group support variable contained 11 questions designed to measure the strength and usefulness of student's support from their peers. Some of these questions were adapted from Sorokosh (2004) and Little (2009) and were found to predict intention to persist and to have a reported Cronbach's alpha reliability ranging from .81 to .96. The remainder was adapted from Donatellis' (2010) institutional integration scale with a reported Cronbach's alpha reliability ranging from .88 to .92. The variable included questions like "since starting this program I have developed close personal relationships with other students" and "few of the students I know would be willing to listen to me and help me if I had a personal problem". The responses were based on a six point Likert type scale measuring extent of agreement with each statement.

The faculty interactions variable contained 11 questions designed to measure the opportunities and ease students had interacting with faculty members as well as the impacts these interactions had on students. Some of these questions were adapted from Sorokosh (2004) and Little (2009), which were found to have a Cronbach's alpha reliability ranging from .81 to .96. The remainder were adapted from Donatelli (2010) and were found to have a Cronbach's alpha reliability ranging from .88 to .92. Students were asked to rate, on a six point Likert type scale, the extent to which they agreed with statements. Some statements were "I am satisfied with the opportunities to meet and interact informally with faculty members" and "faculty are very accessible".

The final variable was involvement in social interactions. This variable contained 6 questions designed to measure student's involvement in informal social interactions. Some interactions asked about were "attended informal dinners and get-togethers with other fellow students" and "met with students to talk about course work, plans of work, and faculty". The questions were adapted from Cardenas' (2005) questionnaire designed to measure doctoral student involvement. The reported overall reliability of the instrument was .93. The responses were based on a six point scale, asking how often they have done various interactions. Finally, to measure a student's overall socialization, which includes academic integration and social integration, scores from the integration scales were combined into one overall mean score.

Intention to Persist Instrument

Several studies have found a link between intention to persist and student's actual persistence (Bean 1982, 1990; Faghihi and Ethington, 1996). Therefore a scale measuring intent to persist

was included in the questionnaire. The scale consisted of five questions and responses were based on a six point Likert type scale measuring extent of agreement. Some questions included were “I am confident I made the right decision to enroll in this program” and “I am sure that I will complete this degree program”.

Sample

The sample was drawn from students in College of Agriculture programs where there are equivalent campus based and online pathways of earning similar degrees. At the universities, these online and campus based programs have similar requirements, professors and structure. This project was part of a larger study on retention in similar campus-based and online programs. The programs were identified using online university and departmental websites. Seven universities containing relevant programs were identified, University of Nebraska, Texas Tech, Virginia Tech, Iowa State, North Carolina State, Texas A and M and Washington State. The programs included horticulture, agriculture, crop science, agriculture education, soil science, plant breeding, plant science, and pest management focuses. A total of fourteen programs at six universities (Texas A and M declined to participate) were identified as fitting the criteria for participation in the study.

Data Collection

The instrument was pilot tested using Axio Survey. M.S. students in the Kansas State University Horticulture department received an e-mail asking for their participation. The e-mail included a

link that took them to the questionnaire. Once they clicked on the link in the email they were taken to the beginning of the questionnaire. There they saw a statement with privacy information and were asked if they consented to be included in the pilot test for the study. They were then taken to the remainder of the questionnaire. After the data were collected Cronbach's reliability coefficients were calculated and a correlational matrix was constructed. Because the Cronbach's alpha's were all above 0.70 no questions were removed. Also, no patterns indicating that the scales were measuring different constructs were identified.

The national survey was, like the pilot study, offered online through Axio Survey. Once programs were identified, e-mails were sent out to the graduate directors of the programs. In some cases the same person was the director of both the online and campus program at the university; otherwise the e-mail was sent to both the campus and online graduate director. The e-mail included some information about the study and a request to forward a message and survey link to all the master's degree graduate students that were currently enrolled in their program(s). The e-mail also included a request for the graduate directors to respond as to whether or not they forwarded the message to their students and an e-mail address to contact if they had any questions. The message for the students and the link to the online survey was included in the bottom of the e-mail to the graduate directors. The message to the students also included some information about the study, a request for their participation, an incentive, which was a 5\$ Starbucks gift card, and a link to the online questionnaire.

One follow up e-mail was sent to the graduate directors with the same information and request for them to forward a message to all the students enrolled in their program. The message to the

students included a reminder request, information about the incentive and a link to the online survey. Both the original and follow up e-mail were sent in the same semester. This process resulted in nine out of ten graduate directors forwarding the email request to their M.S. students.

As mentioned above, students received the invitation to participate in the survey through our email that was forwarded to them from their graduate director. Included in the email was a link to the online survey. Once students clicked on the link in the email they were taken to the beginning of the questionnaire. There they saw a statement with privacy information and were asked if they consented to be included in the study. Students were then taken to the remainder of the questionnaire. The questionnaire was completely anonymous. After the end of the questionnaire students were given the option to provide an e-mail address which would be used to send them their incentive. One reminder was sent. The total number of completed student responses was 54, and of these 42 were usable. The total number of students receiving our email request was solicited from the program directors. Unfortunately, we were not successful in getting that from all program directors, thus we cannot determine response rate.

Data Analysis

Data was downloaded from Axio Survey to Excel (Microsoft, 2010, Redmond, Washington) and then analyzed using Minitab® (Minitab, Inc, 16, State College, PA). Responses were coded such that a response of strongly disagree was given 1 point and a response of strongly agree, 6 points. A few statements were reverse coded with strongly disagree as 6 points and strongly agree as 1 point due to how the statement was written.

Descriptive statistics were used to formulate percentages as well as mean scores for the overall scales of socialization, academic integration, social integration, intention to persist and also on the subscales, advisor relationship, academic interactions, peer group support, faculty interactions and social interactions. Polychoric correlation was used to identify relationships between socialization, academic integration, social integration and intention to persist scales. Polychoric correlation was used because the ordinal variables were obtained by assigning categories to an underlying variable (agreement) that can be thought of as continuous. Coote (1998) stated that information gathered from Likert scales should be analyzed using polychoric correlations.

Because of the ordinal nature of the data, binary logistic regression was used with the scales of academic integration, social integration and socialization as the independent variables and student's intention to persist as the dependent variable to identify if any variables predicted student's intention to persist (Elliot and Woodward, 2007). For this analysis, intention to persist was coded into a binary format. Because responses ranged from 3 to 6, a response of 3 or 4 was coded 0 for low, and a response of 5 or 6 was coded 1 for high.

Finally frequencies, analysis of variance and chi-square tests were run to determine if respondents program type, number of semesters enrolled, enrollment status, possession of an assistantship, total number of hours working for pay, gender or expected time needed to graduate, had any effect on the respondents' scores on the research variables.

Results

Thirty-seven percent of the respondents were thesis-option students and 62% were non-thesis. Campus based respondents made up 48.8% of the sample, online 34.1% and mixed campus/online 17.1%. On average (72.5%) indicated that they had been enrolled between two and five semesters. Sixty-two percent indicated that they were full time, 37.5% were part time, and 55% were on an assistantship. Including the work they may do for their assistantship, 20% of students worked between 1-20 hours a week, 25% between 20 and 40 hours a week and 47.5% indicated that they worked more than 40 hours a week. Fifty-four percent of the students also indicated that the time needed for them to graduate was about what they expected, while 41.5% indicated that it was more than they expected. Finally, out of the sample most (80%) answered that they were White/Caucasian, 61% were female, and 39% were male.

Out of a usable n of 42, the mean overall socialization score was 3.57. The mean scores for academic integration and social integration were similar at 3.5 (Table 1). The mean scores for the subscales varied. The academic integration subscales varied from 2.3 to 4.7. The social integration subscales varied from 2.3 to 4.4 (Table 1). The mean score for the intention to persist scale was high, at 5.13 (Table 1). The possible ranges for all these scales ranged from 1 to 6.

From the Polychoric analysis moderate to strong, positive correlations between academic integration and intention to persist ($r = 0.68$, $n = 42$, $p = 0.05$), between social integration and intention to persist ($r = 0.41$, $n = 42$, $p = 0.05$) and between academic integration and social integration ($r = 0.53$, $n = 42$, $p = 0.05$) were found (Olsson, 1979).

From the logistic regression analysis several statistically significant relationships were found. First was a significant positive relationship between socialization and intention to persist (Table 2). This revealed that for every unit increase in the socialization score (from 1 to 6), it is 5.89 times more likely that there was a high intention to persist score. This model predicts 76.19% of the responses correctly and a Pseudo r^2 value of 0.28 indicates a moderate relationship between the variables. A significant positive relationship between academic integration and intention to persist was also found. The odds ratio indicates that for every unit increase in academic integration it is 3.33 times more likely that we will get a high intention to persist score. The Pseudo r^2 value of 0.22 indicates a moderate relationship with 76.19% of the responses being predicted correctly (Table 2). Finally, a significant positive relationship between social integration and intention to persist was discovered (Table 2). The odds ratio indicates that for every unit increase in social integration a high intention to persist score was 3.54 times more likely. The Pseudo r^2 of 0.16 indicated that this was a weak relationship and that the model predicts 78.57% of the responses correctly.

Socialization was affected by if students were in a thesis program or a non-thesis program and how many hours a week they worked (Table 3). Students working less than forty hours a week and in a thesis program reported higher socialization. Differences in academic integration were found on the number of semesters enrolled and average hours worked per week. Students enrolled in four or more semesters and that worked less than forty hours a week were more academically integrated (Table 3). There was a moderate, significant negative correlation ($r = -0.32$, $n = 41$, $p = 0.05$) between academic integration and age. Differences in social integration

were found for students completing a thesis vs. non-thesis, receiving an assistantship, and average hours worked per week (Table 3). Students completing a thesis who received assistantships and worked less than forty hours a week were more socially integrated (Table 3). A difference in intention to persist was found on the demographic variable of amount of time needed to graduate, those who indicated that the time needed to graduate was less or the same as expected indicated a higher intention to persist (Table 3). There were no significant differences in academic or social integration or intention to persist by the number of semesters a respondent had been enrolled, whether they were enrolled full or part time, or by respondent's gender (Table 3).

Upon further examination it was found that respondents who worked between 1 and 40 hours a week were more likely to have an assistantship ($\chi^2 = 15.89$, $n=39$, $p=0.001$), be enrolled full time ($\chi^2 = 17.03$, $n=39$, $p=0.001$), be a campus student ($\chi^2 = 20.88$, $n=31$, $p=0.001$), and were younger (Table 4). On the other hand those who worked more than forty hours a week were older (Table 4), did not have an assistantship ($\chi^2 = 15.89$, $n=39$, $p=0.001$), were an online student ($\chi^2 = 20.88$, $n=31$, $p=0.001$) and were likely enrolled part time ($\chi^2 = 17.03$, $n=39$, $p=0.001$).

Discussion

Students who were more academically integrated in their program and university are more likely to persist. These results support earlier research studies. Within academic integration, Tinto (1975) theorized that the decision to drop out is a “coping” response to a lack of fit between the student and the system, and stems from, “either insufficient intellectual development or

insufficient congruency between the intellectual development of the individual and the normative climate of the academic systems (p. 106)”. Tinto (1993), Baird (1992) and Weiss (1981) also found that those social interactions which are academic in nature are linked with student intellectual development and persistence.

Additionally, Weiss (1981) found that out of all of a student’s relationships, the student-advisor relationship has a most critical role in a student’s persistence and commitment. Lovitts (1996) also theorized that an advisor is a critical resource for helping a student become socialized and integrated into their field of study and also provides valuable information about what is expected from the student and the way things work in the department and field (Lovitts 1996). Gardner (2007, 2010) also found that a student’s advisor can help students figure out how much independence is good, and provide support, which is often more important to students than having an advisor who was an expert in their field. Students in our study indicated a highly positive advisor relationship.

Students who were more socially integrated also showed a higher intention to persist. This supports findings from Weiss (1981) who demonstrated that the more faculty members a student knows professionally, the more likely a student is to have increased productivity, involvement and, commitment. Gardner (2007, 2010) also supported the importance of faculty members in helping students gain needed skills and dispositions. Gardner (2010) theorizes that interactions with faculty members are important because they are the ones who initiate much of the development, and also because students watch how faculty interact with each other in order to

learn the norms of their field (Gardner, 2007). Students in our study reported positive interactions and relationships with the faculty in their programs.

Additionally, Gardner (2007) found that support is an important theme in the process of socialization of graduate students. Gardner (2007) found that support originates from two main sources, faculty and peers, and that peer support was sometimes more important than faculty support and was important for students at all stages in a program. Beginning students mentioned peer support as what got them through the beginning of their program, and students who were further along mentioned peer support as a way of gaining a clear picture of what is expected of you (Gardner, 2007). Students in our study reported slightly positive feelings of peer group support, however, their feelings of peer group support were lower than their relationships with advisors or other faculty members.

Overall, the data also showed that academic integration and social integration are associated with each other. When combined into an overall construct, higher socialization scores was related to an increase in intention to persist. For students in Master's Agriculture programs this model seems to support the literature that theorizes that academic integration and social integration complement each other and supports Tinto's belief (1993) that student's social and intellectual development are linked. The data also showed several demographics that may be important in a model of socialization. These demographics include whether or not a student has to complete a thesis, whether or not a student has an assistantship, and the number of hours a student has to work per week. Further research needs to be conducted to investigate more in depth, the influence these variables may have on a student's socialization.

Summary

Academic and social integration have been shown to be important factors in graduate student persistence (Church, 2009; Gardner, 2008, 2010; Tinto, 1993; Valero, 2001). The findings of this study seem to support Tinto (1993) who theorized that the components of academic and social integration were related and intertwined with each other. These findings also support Lovitts (1996) who theorized that if students are separated from each other and from faculty, they cannot find the emotional support they need, they also cannot figure out how the system is supposed to work and they cannot voice their concerns (Lovitts 1996), placing everything on the students and their own resources. Overall integration, both academic and social, helps bind people to each other and their communities through an exchange of ideas, knowledge, impressions and feelings (Lovitts 1996).

Tables

Table 3-1 Mean scores^{z,y} for College of Agriculture Master's Students for academic integration, social integration, and intention to persist; and advisor relationship, academic interactions, peer group support, faculty interactions, and social interactions.

Scale	Sub Scales		
	Mean		SD
Socialization	3.57		
Academic Integration	3.53		
		Advisor Relationship	4.70
		Academic Interactions	2.35
Social Integration	3.55		
		Peer Group Support	3.91
		Faculty Interactions	4.40
		Social Interactions	2.33
Intention to Persist	5.13		1.30

^z. n = 42

^y. Scores for all scales and subscales had a possible range of 1-6

Table 3-2 Regression matrix indicating the Binary Logistic Regression analysis^z (dependent variable = High) between overall socialization scores and intention to persist scores.

	Socialization	Academic Integration	Social Integration
Intention to Persist			
Coefficient ^y	1.77	1.20	1.27
Z ^x	3.05**	3.0**	2.53**
Odds Ratio	5.89	3.33	3.54
Model Chi-square ^w	14.29***	11.64***	8.36**
McFadden's Pseudo r ²	0.28	0.22	0.16
Correctly Predicted	76.19%	76.19%	78.57%

^z. n = 42

^y. Coefficients represent the change in the logit for each unit change in the predictor

^z. Z represents the parameter significance

^w. Model Chi-square represents the significance of the overall model

*, **, ***Significant at P= 0.05, 0.01, or 0.001 respectively using Logistic Regression Analysis

Table 3-3 Demographic analysis of the overall sample of College of Agriculture masters students by program type, semesters enrolled, enrollment status, assistantship, number of hours working for pay, gender and amount of time expected to graduation.

Demographic Variable	n^z	Academic Integration Mean Score^y	Social Integration Mean Score^y	Socialization Mean Score^y	Intention to Persist Mean Score^y
Program Type					
Thesis	26	3.36	3.98	3.81	5.11
Non- Thesis	15	2.99	3.36	3.30	5.19
Total	41				
<i>P</i>		0.27	0.03*	0.05*	0.76
Semesters Enrolled					
1 to 3	20	2.90	3.74	3.54	5.16
4 or more	20	3.53	3.76	3.69	5.07
Total	40				
<i>P</i>		0.05*	0.93	0.58	.072
Enrollment Status					
Full Time	25	3.31	3.97	3.77	5.08
Part Time	15	3.02	3.41	3.36	5.21
Total	40				
<i>P</i>		0.38	0.07	0.13	0.61
Assistantship					
Yes	22	3.34	4.04	3.83	4.99
No	18	3.14	3.41	3.37	5.28
Total	40				
<i>P</i>		0.53	0.03*	0.08	0.26
Average hours worked per week					
1 to 40	20	3.55	4.10	3.91	5.15
>40	20	2.85	3.46	3.34	5.13
Total	40				
<i>P</i>		0.03*	0.03 *	0.02*	0.94
Gender					
Male	16	3.22	3.88	3.73	5.23
Female	25	3.24	3.68	3.55	5.08
Total	41				
<i>P</i>		0.99	0.50	0.49	.057
Amount of time needed to graduate					
Less or same as expected	23	3.35	3.86	3.74	5.37
Greater than Expected	17	3.08	3.74	3.55	4.86
Total	40				
<i>P</i>		0.40	0.68	0.44	0.04*

^z Number of respondents for each category varied due to non-responses.

^y. Range for mean scores is 1-6

*Significant at P=0.05 using ANOVA

Table 3-4 Binary Logistic Regression analysis^z (dependent variable = > 40 hours) between age and hours worked.

Age	# Hours work per week
Coefficient ^y	0.46
Z ^x	2.47**
Odds Ratio	1.59
Model Chi-square ^w	18.67**
McFadden's Pseudo r ²	0.36
Correctly Predicted	81.58%

^z. n = 31

^y. Coefficients represent the change in the logit for each unit change in the predictor

^x. Z represents the parameter significance

^w. Model Chi-square represents the significance of the overall model

**Significant at P= 0.01, using Binary Logistic Regression Analysis

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**Chapter 4 - Relationships among Socialization, Online Program
Design Factors, and Persistence to Complete in Campus or Online
College of Agriculture Master's Students**

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Title Page

The Relationship between Socialization, Online Program Design Factors and Persistence to Complete in Campus or Online College of Agriculture Master's Students

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Abstract

To investigate differences in student's academic and social integration between campus based and online programs College of Agriculture Masters students in U.S. campus and online degree programs were surveyed. To investigate potential influences of differences, College of Agriculture graduate program directors were surveyed. Data were gathered using online questionnaires. The student questionnaire included demographics and three scales, academic integration, social integration and intention to persist. Academic integration was measured with the subscales of advisor relationship and academic interaction. Social integration was measured with the subscales of peer group support, faculty interactions and involvement in social interactions. The director questionnaire included five variables designed to measure attitudes and design of online programs. Descriptive statistics, ANOVA, Mann-Whitney U and Tukey's HSD were conducted to identify program differences and to identify attitude and program format differences. Significant differences were found between online and campus students on academic and social integration scales, but not on the intention to persist scale; and on graduate director attitudes and types of communication used in the graduate online programs. This study indicates that there are differences in integration of campus and online students. Strategies to improve online student's socialization may include communication components designed to increase meaningful interactions.

Introduction

In recent years, there has been a great increase in online learning. In 2006-2007, the National Center for Education Statistics reported that 66 percent of 2-year and 4-year institutions offered college-level distance education courses (U.S Department of Education, 2009). In 2012 that number grew to 86.6 percent (Allen and Seaman, 2013). There were also an estimated 20 million students enrolled in these distance education courses, out of which 6 million are taking at least one online course (Allen and Seaman, 2013). These courses have allowed many students to pursue educational degrees without being limited by their distance to a university (Card and Horton, 2000).

Though there has been an increase in online learning, many sources report a traditionally higher drop rate for online courses as compared to traditional campus-based courses (Carr, 2000; Diaz, 2000). Carr (2000) for example, found that the difference in student persistence in campus-based programs was 10-20% higher than in distance programs, though it was also found that there was a lot of variation in this persistence between institutions, with some reporting rates of 80% completion and others reporting less than 50% completion of distance programs. Parker (1995, 1999) also found that some first attempts at adapting courses for distance learning had high dropout rates of 70-80% (Parker, 1995, 1999), and even many established programs expect a higher dropout rate than a corresponding campus course, at the rate of 11-15% (Bos and Shami, 2006). Thus, retention in online degree programs is a challenge of many universities today.

A more recent study looked at completion rates of students in two online graduate degree programs as compared to the campus-based delivery format of the same two programs (Patterson

and McFadden, 2009). The online and campus-based programs were mostly identical; they were based in the same departments, and used the same professors, curriculum, assignments, technologies and support services to control for intervening variables. The study found that the two campus-based programs had completion rates of 89% and 96%. In contrast, the online programs had completion rates of 43% and 76.5% respectively. This showed that students in the online programs were 6-7 times more likely to drop out or not complete the program than students who attended the campus-based program (Patterson and McFadden, 2009). Also, there was no significant relationship found between students' GPA or admission test score and dropout.

If there is no significant relationship between GPA and test scores of online graduate students who persist and those who drop out, what other factors are influencing graduate student retention in online programs? One factor may be teaching strategies within specific fields. Rieger (2002) mentioned that the nature of agriculture education, with its abundance of hands-on-learning and its visual content, may not transfer well to distance education. Another difficulty that students may face concerns the fact that the online environment can provide a more diverse group of students from a wide array of locations and with different backgrounds (Cassiani, 2001). This can contribute to a lack of interaction, and this lack of interaction, along with a deficiency of hands-on experience, may make students feel isolated (Paul and Brindley, 1996). Compounding this problem is the fact that one study found that though in some courses students created a supportive and interactive environment with their teachers and other students, the environment lasted only through that particular class, or in some cases, particular activity (Ivankova and Stick, 2007). This lack of interaction may be problematic as Tinto (1993) suggests that interactions

between students and faculty at a university shape student's development through socialization, which, ultimately, affects their persistence at a university (Tinto 1993).

Gardner (2008) defines socialization as the process through which students learn how to behave, and what it means to succeed or fail. Eaton and Bean (1993) theorized that, "Social and academic integration can be considered to be primary indicators of adjustment to the college environment" (p. 9). Socialization, then, can be described by two different constructs, academic integration and social integration. Social integration involves interpersonal relationships, support, interactions with others, and a sense of belonging at a university (Spady, 1970; Tinto, 1975). Social integration stems from extracurricular activities, informal dealings with student's peer group and interactions with faculty and staff (Tinto, 1975). When these activities are successful, they will help a student develop friendships, support, affiliation and channels of communication (Tinto, 1975). Academic integration is explained by grade performance and intellectual development. Grade performance reflects an ability to meet the standards of the academic system; intellectual development involves a student valuing their education as a process of development in which they gained knowledge and ideas (Tinto, 1975). Academic integration is key because it involves students becoming integrated into the system that will allow them to achieve their goal of becoming professionals in their disciplines (Lovitts, 1996).

These theories provide a basis for which to examine graduate student persistence. Tinto (1993) suggests that research done on graduate student persistence will yield similar findings as those done on undergraduate students. However, there are differences to be considered when examining graduate education as opposed to undergraduate education. First it is more likely that

the pattern of persistence will be more similar among the same field of study across institutions than among different fields at the same university (Zwick, 1991). Additionally students' social interactions with both peers and faculty are closely linked with students' intellectual development, as well as the development of the skills and knowledge necessary to complete the degree. Social membership in a program becomes part of a student's academic membership in the program and, ultimately, in the student's field (Tinto, 1993). The second difference in graduate education is the goal of socialization. According to Baird (1992) and Rosen and Bates (1967), the goal of graduate student socialization is to take a raw scholar and turn them into an academic professional. Finally, unlike with undergraduate students, the effect that the community has on the graduate student changes over time (Tinto, 1993). For example, Tinto (1993) mentioned that persistence in the later part of the degree, which involves research, is likely to be influenced by a single faculty member or a small group of faculty members. This is not so much the case in the beginning stages of a doctoral student's degree.

As discussed above, relationships between students and their advisors, committees, and peers influence the process of socialization, integration and ultimately students' persistence in their degree programs. Thus, our research question is: does the online environment effect student's persistence to complete?

The objectives of this study were to explore factors relating to academic and social integration. Specifically, are there differences in student's academic and social integration between campus based and online programs in the College of Agriculture and do these differences affect student's

persistence? Also, is integration a factor that is being considered when designing an online course and if so, what steps are taken in the design of the course to increase integration?

Materials and Methods

Sample

The study population were students and graduate program directors from Colleges of Agriculture with campus based and online Master's degree programs. The student sample was drawn from students in College of Agriculture programs with equivalent campus based and online pathways of earning similar degrees. At the universities, these online and campus based programs have similar requirements, professors and structure. We began by identifying U.S. universities that had both online and campus based agriculture programs. The programs were found through online searches of university webpages. Seven universities containing relevant programs were identified, University of Nebraska, Texas Tech, Virginia Tech, Iowa State, North Carolina State, Texas A & M and Washington State. From these universities 16 online and campus programs were identified. These programs included agronomy, horticulture, agriculture, plant breeding and pest management degrees. Invitations to participate resulted in all but Texas A and M agreeing to participate.

The graduate program director sample was drawn from graduate directors of online College of Agriculture Master's graduate degree programs. The sample of graduate directors came from

various U.S colleges that had online College of Agriculture graduate programs that were identified through online searches of university web sites.

Instrumentation

Overall measurement of integration

To collect the data a questionnaire instrument was used. Questions were adapted from instruments from Sorokosh (2004), Little (2009), Cardenas (2005) and Donatelli (2010) which had reported Cronbach's alpha reliability ranging from 0.81 to 0.96. Cronbach's alpha is a measure of internal consistency for a set of related items. A reliability coefficient of .70 or higher is considered acceptable in most social science research situations. A six point Likert type scale of agreement or a six point scale asking "how often have you done the following interactions" were used.

The first subscale contained questions relating to student's academic integration. The two variables included in measuring academic integration were advisor relationship and academic interactions. The scores of the two variables were combined to create an average academic integration score. The advisor relationship variable consisted of eight questions. The first, do you have an advisor consisted of a yes or no response. The remainder of the questions measured the quality of the relationship between the student and their advisor. These included questions such as: "my advisor advises me effectively", and "my relationship with my advisor has had a positive influence on my intellectual growth". The participation in academic interactions variable

contained seven questions designed to measure the frequency students participated in academically focused interactions with others. The questions were adapted from Cardenas' (2005) questionnaire designed to measure doctoral student involvement. Some of the interactions asked about were "attended professional conferences or meetings" and "attended research seminars in yours or others disciplines". The responses were based on a six point scale, asking how often they have done various interactions.

The second subscale of the instrument contained questions relating to social integration. The three variables included in measuring social integration were peer group support, interactions with faculty, and involvement in social interactions. The sums of the three variables were combined to create a social integration score. The peer support variable contained 11 questions designed to measure the strength and usefulness of student's support from their peers. The variable included questions like "since starting this program I have developed close personal relationships with other students" and "few of the students I know would be willing to listen to me and help me if I had a personal problem". The responses were based on a six point Likert type scale measuring extent of agreement with each statement. The faculty support variable contained 11 questions designed to measure the opportunities and ease students had interacting with faculty members as well as the impacts these interactions had on students. Students were asked to rate, on a six point Likert type scale, the extent to which they agreed with statements. Some statements were "I am satisfied with the opportunities to meet and interact informally with faculty members" and "faculty are very accessible". The final variable was involvement in social interactions. This variable contained 6 questions designed to measure student's involvement in informal social interactions. Some interactions asked about were "attended informal dinners and

get-togethers with other fellow students” and “met with students to talk about course work, plans of work, and faculty”. The responses were based on a six point scale, asking how often they have done various interactions.

Intention to Persist Instrument

Several studies have found a link between intention to persist and student’s actual persistence (Bean 1982, Bean, 1990; Faghihi and Ethington, 1996). Therefore a scale measuring intent to persist was included in this instrument. The scale consisted of five questions and responses were based on a six point Likert type scale of agreement. Some questions included were “I am confident I made the right decision to enroll in this program” and “I am sure that I will complete this degree program”.

Graduate Director Instrument

For this component a questionnaire was used to collect data. The questionnaire contained five variables. The first variable measured the extent to which they agreed that interactions and relationships between themselves and students and between students and each other are important. Interaction was defined as “the activity of being with and talking to other people and the way that people react to each other” (“Interaction”, 2013). As mentioned above many studies (Gardner, 2007; Tinto, 1975; Spady, 1970) support that interaction between students and faculty is important in developing academic and social integration. Relationship was defined as “the way in which two or more people talk to, behave toward, and deal with each other” (“Relate”, 2013).

The second variable measured the format and design of the online program overall or in the individual courses of the program. Included were questions about face to face interaction, asynchronous text communication, online collaborative sharing, synchronous video communication, synchronous text communication and the use of social networking sites. They were asked whether these format components were used “at the programmatic level”, which was defined as “Components used within the graduate program as a whole, targeted to all students in the program regardless of the individual courses they may be enrolled in”; “used in a program course”, which was defined as “Components used by instructors within and for their individual courses, targeted to students enrolled in a specific course” or “used both at programmatic and course level”.

The third variable measured whether or not these components were specifically planned within the course with the purpose of encouraging interaction between students and their peers or between themselves and their students. Graduate directors were again asked whether the components were used “at the programmatic level”, “used in a program course”, or “used both at programmatic and course level”.

The next two questions asked graduate directors to rate which of the above components they felt were effective at achieving interaction and discussion between themselves and their students or between students and each other at both the program and course level. The graduate directors were asked to rank the components they felt were effective with a one being the most effective component and six least effective.

Finally, the fifth variable measured the frequency the components were used. They were asked to rate, on a scale of 1-5 how often they used each of the components at both the program and course level; with a 1 indicating daily or every other day usage, 2 indicating weekly, 3 indicating two to three times a month, 4 once a month and five less than once a month.

Data Collection

Student Survey

The instrument was pilot tested using Axio Survey (Axio Learning, 1.0, Manhattan, KS). M.S. students in the Kansas State University Horticulture department received an e-mail asking for their participation. The e-mail included a link that took them to the questionnaire. Once they clicked on the link in the email they were taken to the beginning of the questionnaire. There they saw a statement with privacy information and were asked if they consented to be included in the pilot test for the study. They were then taken to the remainder of the questionnaire. After the data were collected Cronbach's reliability coefficients were calculated and a correlational matrix was constructed. Because the Cronbach's alpha's were all above 0.70 no questions were removed. Also, no patterns indicating the scales were measuring different constructs were identified. The national survey was, like the pilot study, offered online through Axio Survey. Once programs were identified, e-mails were sent out to the graduate directors of the programs. In some cases the same person was the director of both the online and campus program at the university; otherwise the e-mail was sent to both the campus and online graduate director. The e-

mail included some information about the study and a request to forward a message and survey link to all the master's degree graduate students that were currently enrolled in their program(s). The e-mail also included a request for the graduate directors to respond as to whether or not they forwarded the message to their students and an e-mail address to contact if they had any questions. The message for the students and the link to the online survey was included in the bottom of the e-mail to the graduate directors. The message to the students also included some information about the study, a request for their participation, an incentive and a link to the online questionnaire.

One follow up e-mail was sent to the graduate directors with the same information and request for them to forward a message to all the students enrolled in their program. The message to the students included a reminder request, information about the incentive and a link to the online survey. Both the original and follow up e-mail were sent in the same semester.

As mentioned above, students received the invitation to participate in the survey through their graduate director. Included in the email was a link to the online survey. Once students clicked on the link in the email they were taken to the beginning of the questionnaire. There they saw a statement with privacy information and were asked if they consented to be included in the study. Students were then taken to the remainder of the questionnaire. The questionnaire was completely anonymous. After the end of the questionnaire students were given the option to provide an e-mail address which would be used to send them their incentive. A total of 50 master's students responded, with representation across all six universities included in the study. Program directors were asked to provide the total number of students they sent the survey e-mail

request to. This number was not provided from all programs so a response rate cannot be calculated.

Graduate Director Survey

We began by identifying U.S. universities that had online College of Agriculture master's degree programs. These programs were identified using online university and departmental websites. Programs at 15 universities were identified, the types of programs included agriculture, agricultural education, agroecology, agronomy, crop science, horticulture, pest management, plant breeding, and turfgrass management.

The survey was offered online through Axio Survey. Once programs were identified, e-mails were sent out to the graduate directors of the programs. The e-mail included some information about the study and a link to the survey.

One follow up e-mail was sent to the graduate directors with the same information and request for participation. Both the original and follow up e-mail were sent in the same semester.

As mentioned above, included in the email was a link to the online survey. Once graduate directors clicked on the link in the email they were taken to the beginning of the questionnaire.

There they saw a statement with privacy information and were asked if they consented to be included in the study. Directors were then taken to the remainder of the questionnaire. The questionnaire was completely anonymous. Fifteen graduate directors were invited to participate, 12 did, for a response rate of 80%.

Data Analysis

Student Data

Data was downloaded into Microsoft Excel (Microsoft, 2010, Redmond, Washington) and analyzed using Minitab (Minitab, Inc, 16, State College, PA). Answers were coded 1 (strongly disagree) to 6 (strongly agree). Data analysis conducted to examine the difference between online, mixed and campus based graduate students on the academic and social integration scales, subscales and the intention to persist scale included ANOVA and Tukey's HSD, to determine if there was a significant difference between campus based and online students on any of the measures.

There was a difference in the subscale of academic interactions between how students were answering two of the seven questions (ANOVA). There were two different sub-constructs within the academic interactions construct. Thus the academic interactions construct was broken into two groups, research interactions and non-research academic interactions. Research interactions included questions such as "Met with fellow students to talk about your research" and "Attended research seminars in yours or others disciplines". Non-research interactions included questions such as "Met outside of class with other students in your program for a meeting, discussion, or study group" and "Participated in departmental colloquium or brown bags"

Graduate Director Data

Descriptive statistics were run to assess the percentage of directors who answered each category to determine what percentage either “agreed” or “disagreed” that interaction and relationships, either between themselves/instructors or between students were important.

Because of the ordinal nature of the data, a Mann-Whitney U Test was run between the two questions involving interactions and relationships between students and the two questions involving interactions between themselves/instructors and students in an online graduate degree program. The importance of the interactions and relationships was the dependent variable with the groups of student to student interactions/relationships and director/instructor to student interactions/relationships being the independent variables. This was done to test whether the importance assigned to these types of interactions and relationships was the same for both groups.

A Tukey’s HSD was run on the responses from the question of “Please indicate ... how often these components are used at the programmatic level” to determine if there was a difference between how often each of the components were used at the program level in the online agriculture programs. The components included face to face interaction, asynchronous text communication, online collaborative sharing, synchronous video communication, synchronous text communication and the use of social networking sites. A Tukey’s HSD was also run on the responses from the question of “Please indicate ... how often these components are used at the

program course level” to determine if there was a difference between how often each of the components were used at the program course level in the online agriculture programs.

Results and Discussion

Demographics

Thirty-seven percent of the respondents were thesis-option students and 62% were non-thesis. Campus based respondents made up 48.8% of the sample, online 34.1% and mixed campus/online 17.1%. On average (72.5%) they had been enrolled between two and five semesters. Sixty-two percent indicated that they were full time, 37.5% were part time, and 55% were on an assistantship. Including the work they may do for their assistantship, 20% of students worked between 1-20 hours a week, 25% between 20 and 40 hours a week and 47.5% indicated that they worked more than 40 hours a week. Fifty-four percent of the students also indicated that the time needed for them to graduate was about what they expected, while 41.5% indicated that it was more than they expected. Finally, out of the sample most (80%) answered that they were White/Caucasian, 61% were female, and 39% were male.

Academic and Social Integration

There were significant differences in the mean scores between online, campus based and mixed program students for academic integration and social integration (Table 1). Students who were in campus based and mixed programs scored higher on academic integration than those in the

online program, and students in the campus based programs scored higher on social integration. The student's intention to persist did not differ across the program types and overall, the student's indicated a high intention to persist.

To further understand the effects of academic integration and social integration on intention to persist, the constructs for each factor were also analyzed. Within academic integration, research interactions was significantly different across program types with students in online programs having the lowest score (Table 2). There were no differences between program type in mean score for advisor relationship or non-research interactions.

As mentioned above, involvement in research interactions mean scores were different between program types. Within social integration, involvement in social interactions mean scores were also significantly different between the program types (Table 3). This construct dealt with interactions that did not have an academic component such as departmental socials, student get-togethers, or informally meeting with and talking to other students or faculty members. These differences in involvement in both types of interactions is perhaps not surprising considering that most online students live some distance away from both other students and from the campus where the program is offered. Though the survey asked students to consider both online and face-to-face interactions, it is in some ways not as convenient or easy to be involved in these types of interactions when living at a distance. For example, distance students do not "see" the other students in the hallway and they cannot physically drop by their offices or the offices of other faculty or staff members or walk to a departmental seminar.

However, participation in interactions, whether social or academic in nature were not the only constructs that were different. Within social integration, a difference in peer group support was also seen (Table 3). Specifically the mean rating for peer group support was lower in the online students than in the campus based students. Considering the lower amount of interactions, this is perhaps not surprising and also perhaps a bit alarming. As mentioned above, social integration involves interpersonal relationships and support (Spady, 1970; Tinto, 1975); and stems from interactions with students peer group, faculty and staff (Tinto, 1975). Also as mentioned above, the diversity or backgrounds and locations that can be present in an online environment may contribute to a lack of interaction and a sense of isolation (Paul and Brindley, 1996).

However a key factor in fixing this lack of interaction and thus combating feelings of isolation is the idea of a sense of “presence”. Lehman and Simone (2010) provide a good definition saying that presence involves both the sense of “being there”, where students feel they are somewhere besides their immediate environment; and a sense of “being together with others”. Lehman and Simone, (2010) also described social presence as the sense that other people are “real” and mentioned that it involves a personal and emotional connection to the group. The discussion of social presence is important because when it is achieved it creates an atmosphere where students and instructors engage in dialogue with each other about the course content (Lehman and Simone, 2010). If social presence is felt, it allows students to feel supported and ‘safe’ which helps students become more comfortable about expressing their thoughts and ideas (Lehman and Simone, 2010). This helps to make interactions engaging and meaningful and helps students to integrate into and persist in a course (Rourke et al, 2001).

Online Graduate Relationships

Graduate directors of online programs showed a statistically significant difference between the importance assigned to student to student interactions and relationships and director/instructor to student interactions and relationships (Table 4). It can be further concluded that the director/instructor to student relationships were ranked as more important than student to student relationships in an online graduate program (Table 4). This difference may help explain why student interactions with faculty and advisor relationship were not significantly different across program type (Table 2, 3); it is possible that the online programs are designed to insure these interactions occur. This difference may also help explain why differences were seen in both involvement in social interactions and peer group support. If graduate directors do not consider student to student interactions as important, online programs may not be deliberately designed to incorporate as many interactions between students. This, in turn, could inhibit the development of social presence because peer-to-peer interaction in online environments stimulates and is stimulated by social presence (Moore and Kearsley, 2004). This in turn could affect the support student's feel from their peers because when students participate in interaction, project their identities and feel others presence they become bound together (Gunawardena and Zittle, 1997).

Types of Communication

The program directors were also asked about the use of many methods used today to foster online interaction and communications. Asynchronous text communication and online collaborative sharing were used significantly more often than synchronous video communication

and face to face interaction at the programmatic level in an online graduate degree program (Table 5). There was no significant difference in the amount that asynchronous text communication, online collaborative sharing, synchronous text communication and social networking sites were used at the program level.

Asynchronous text communication was used significantly more often than synchronous video communication, synchronous text communication and face to face interaction at the program course level (Table 6). There was no significant difference in the amount that asynchronous text communication, online collaborative sharing and social networking sites were used, at the course level. These results indicate that more communication components are used more often at the programmatic level than the course level. Also at the programmatic and course levels, face-to-face interaction and synchronous video communication methods of communication which allow the people communicating to see others faces and body language, were the least used.

If we go back to the idea of social presence as the sense that other people are “real” and the sense of “being together with others” outside of students immediate environment (Lehman and Simone, 2010), then the information that synchronous and face-to-face interactions are less used than asynchronous types of communication is important. For one, the process of communicating emotions and feelings is important in communication. Tu and McIsaac (2010) found that in an online environment, plain text may be lacking in stimulation and students find it harder to express the meanings and emotions that they intend and therefore are concerned about misunderstanding others and about other students misunderstanding them. Also response time is crucial in online interaction, So and Brush (2008) found that students reacted negatively to the

absence of synchronicity especially as related to the lack of immediate feedback. Tu and McIsaac (2010) also found that if a student did not respond in the time expected or did not respond at all, the sender felt less social presence. Thus So and Brush (2008) suggest two-way synchronous communication and or visual and auditory cues as better types of communication to encourage interaction. These types of interaction in turn can help to create an environment where students can give and receive support from their peers and feel more integrated.

Summary

Academic and social integration have been shown to be important factors in graduate student persistence (Church, 2008; Gardner, 2008, 2010; Tinto, 1993; Valero, 2001). The findings of this study illustrate some differences in integration between campus based and online students in College of Agriculture programs, specifically that campus students are more involved in research and social types of interactions than online students. Students in online programs are also less likely to feel supported by their peers. Though this study cannot determine the directionality of this relationship, the idea of social presence which both stems from interactions with other students (Moore and Kearsley, 2005) and helps make interactions meaningful and engaging (Rourke, et al, 2001) may be useful in understanding the results. These results also showed that though graduate directors of online Agriculture programs consider director/instructor to student relationships important, they do not consider student to student relationships as important. This combined with the results showing that asynchronous text communication is used more frequently than synchronous forms of communication illustrate that perhaps there is a deficiency

of social presence between students in online Agriculture programs, which could be playing a role in online student's levels of integration in their programs.

Tables

Table 4-1 Matrix indicating mean scores^{z,y}, standard deviations and ANOVA for academic integration scores, social integration scores and intention to persist scores by program type.

Program Type		Academic Integration	Social Integration	Intention to Persist
Campus Based	Mean	3.55a	4.22a	5.06
	SD	0.86	0.82	0.71
Online	Mean	2.55b	3.16b	5.07
	SD	1.07	0.79	0.89
Mixed	Mean	3.66a	3.61ab	5.49
	SD	0.58	0.72	0.76
F		5.98	7.41	0.83
P-Value		0.005**	0.002**	0.44

^z. n = 42

^y. range of scores are 1 (low) to 6 (high)

** Significant at P= 0.01, using Tukey's HSD

Table 4-2 Matrix indicating mean scores^{z,y}, standard deviations and ANOVA for academic integration subscale scores for advisor construct, research interactions and non-research interactions.

Program Type		Advisor Relationship	Research Interactions	Non-Research Interactions
Campus Based	Mean	4.37	3.13a	2.56
	SD	1.81	0.84	0.56
Online	Mean	5.29	1.54b	2.11
	SD	0.40	0.80	0.87
Mixed	Mean	4.99	2.36ab	2.54
	SD	1.37	0.95	0.71
	F	0.98	14.68	1.87
	P-Value	0.39	0.001***	0.168

^z. n = 42

^y. range of scores are 1 (low) to 6 (high)

*** Statistically significant at the 0.001 level using Tukey's HSD

Table 4-3 Matrix indicating mean scores^{z,y}, standard deviations and ANOVA for social integration subscale scores for peer-group support, interactions with faculty and social interactions.

Program Type		Peer-Group Support	Interactions with Faculty	Social Interactions
Campus Based	Mean	4.36a	4.72	3.07a
	SD	0.81	1.18	1.03
Online	Mean	3.24b	4.02	1.30b
	SD	1.20	1.14	0.48
Mixed	Mean	3.85ab	4.14	2.19ab
	SD	0.92	1.05	0.86
	F	5.45	1.75	17.89
	P-Value	0.008**	0.188	0.001***

^z. n = 42

^y. range of scores are 1 (low) to 6 (high)

** , *** , Statistically significant at the 0.01 or 0.001 level respectively using Tukey's HSD

Table 4-4 Mann-Whitney U test^z comparing mean rank responses among Student to Student interaction and relationship and Graduate Director/Instructor to Student interaction and relationship questions.

	Group	N	Sum of Ranks
Importance of Interactions and Relationships	Student to Student Interactions and Relationships	24	420
	Director/Instructor to Student Interactions and Relationships	24	756
	Total	48	1176***

^z. $z = -3.45$

*** Significant at the 0.001 level using Mann-Whitney U test

Table 4-5 Differences between mean responses (Tukey's HSD^{z,y}) on how often these components were used at the program level.

	Asynchronous Text Communication	Online Collaborative Sharing	Other	Synchronous Text Communication	Social Networking Site	Synchronous Video Communication
Online Collaborative Sharing	1.28					
Other Choice	0.73	0.00				
Synchronous Text Communication	2.36	1.09	0.64			
Social Networking Site	2.77	1.49	0.88	0.39		
Synchronous Video Communication	4.80**	3.48**	2.04	2.32	1.94	
Face-to-face Interaction	4.96**	3.68**	2.21	2.56	2.18	0.31

^z. n = 12

^y. Critical Value 3.07

** Statistically significant at the 0.01 level using Tukey's HSD

Table 4-6 Differences between mean responses (Tukey’s HSD^{z,y}) on how often these components were used at the program course level.

	Other Choice	Asynchronous Text Communication	Online Collaborative Sharing	Social Networking Site	Synchronous Text Communication	Synchronous Video Communication
Other Choice						
Asynchronous Text Communication	0.39					
Online Collaborative Sharing	1.52	2.74				
Social Networking Site	1.59	2.84	0.17			
Synchronous Text Communication	2.09	3.91*	1.31	1.12		
Synchronous Video Communication	2.37	4.42*	1.91	1.71	0.61	
Face-to-face Interaction	2.54	5.18*	2.38	2.15	0.94	0.26

^z. n = 12

^y. Critical Value 3.08

* Statistically significant at the 0.05 level using Tukey’s HSD

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Chapter 5 - Thesis Conclusion

At the start of this paper we identified two main objectives. The first was to explore whether social integration was a factor in retention and success with students who were in a College of Agriculture Masters program. The first sub-objective of this was to explore whether students who were more integrated indicated a higher intention to persist than students who were less integrated. In this research we conclude that academic and social integration factors are related, in a positive manner, to student's intention to persist and to some extent can be used to predict a student's intention to persist though in this study student's demonstrated a high intention to persist. This study also found that there may be some personal factors that influence student's academic and social integration. In particular working more than forty hours a week, being enrolled in school part time, not having an assistantship and being an online student contributed to lower academic and social integration scores in College of Agriculture master's students.

The second sub-objective was to explore whether there were differences in student's academic integration, social integration or intention to persist between campus based and online students in the College of Agriculture. The findings of this study also illustrated some differences in integration between campus based and online students in College of Agriculture programs, specifically that campus students are more involved in research and social types of interactions than online students. Students in online programs are also less likely to feel supported by their peers.

The final objective was to explore whether integration was a factor that was being considered when designing an online course and if so, what steps were being taken in the design of the course to increase integration. The results from the graduate director survey showed that though graduate directors of online Agriculture programs consider director/instructor to student relationships important, they do not consider student to student relationships as important. This combined with the results showing that asynchronous text communication is used more frequently than synchronous forms of communication illustrate that perhaps there is a deficiency of social presence between students in online Agriculture programs, which could be playing a role in online student's levels of integration in their programs.

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Appendix A - Graduate Student Survey

Opening Instructions

The purpose of this study is to explore factors of social integration of graduate students. The information we gain through this research will help give us a better understanding of the experiences of graduate students. As part of this project we are asking you to complete a short 10-20 min questionnaire for us. Participation in this research is strictly voluntary. You may exit the survey anytime. Responses are **completely anonymous** and will not be linked back to you. At the end you may enter to receive **one of fifty \$5 Starbucks gift cards**. By clicking on the button below you indicate that you have read and understand this consent form, and willingly agree to participate in this study under the terms described.

Academic Integration

Please select one of the following; are you a

- Ph.D. Student
- Masters Student

For the following questions, **advisor** refers to a graduate advisor, major professor, graduate supervisor, or the primary faculty member guiding your program of study and thesis work. Do you have an Advisor?

- Yes
- No

Advisor Questions

INSTRUCTIONS: For the following questions, please rate **how strongly you agree or disagree** with each of the following statements by clicking the appropriate circle. Please use the following scale:

- 1=Strongly Disagree
- 2=Somewhat Disagree
- 3=Slightly Disagree
- 4=Slightly Agree
- 5=Somewhat Agree
- 6=Strongly Agree

1. My relationship with my advisor has had a positive influence on my intellectual growth.
2. My relationship with my advisor has had a positive influence on my career goals.
3. My relationship with my advisor has had a positive influence on my personal growth.

4. My advisor advises me effectively.
5. My advisor cares about how I do in the program.
6. My relationship with my advisor is very positive
7. I have a poor relationship with my advisor.

Involvement in Academic Interactions

INSTRUCTIONS: For the following questions, consider a **typical month** for you and rate **how often** you have done each of the following activities by clicking in the appropriate circle. Please use the following scale:

- 1=Never
- 2=Less than once a month
- 3= Once a month
- 4= Twice a month
- 5= Once a week
- 6=Twice a week or more

1. Met outside of class with other students in your program for a meeting, discussion, or study group.
2. Met with fellow students to talk about your research.
3. Attended workshops on career development/opportunities.
4. Attended professional conferences or meetings.
5. Participated in an outreach or extension project.
6. Attended research seminars in yours or others disciplines.
7. Participated in departmental colloquium or brown bags.

Social Integration

Peer Group Support

For the following questions, **students** refers to any other students **at your university**.

INSTRUCTIONS: For the following questions, please **rate how strongly you agree or disagree** with each of the following statements by clicking in the appropriate circle. Please use the following scale:

- 1=Strongly Disagree
- 2=Somewhat Disagree
- 3=Slightly Disagree
- 4=Slightly Agree
- 5=Somewhat Agree
- 6=Strongly Agree

1. Since starting this program I have developed close personal relationships with other students.

2. The student friendships I have developed during this program have been personally satisfying.
3. It has been difficult for me to meet and make friends with other students.
4. My interpersonal relationships with other students have had a positive influence on my intellectual growth and interests in ideas.
5. Few of the students I know would be willing to listen to me and help me if I had a personal problem.
6. My interaction with peers contributed greatly to my progress in this program.
7. Most students at this university have values and attitudes different from my own.
8. My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values.
9. During most of my graduate program I felt socially isolated from my fellow graduate students.
10. There is a sense of solidarity among the students in this program.
11. If I have a problem, it's easy to find someone here to help.

Interactions with Faculty

For the following questions **faculty** refers to any educator who works at your university.

INSTRUCTIONS: For the following questions, please **rate how strongly you agree or disagree** with each of the following statements by clicking in the appropriate circle. Please use the following scale:

- 1=Strongly Disagree
- 2=Somewhat Disagree
- 3=Slightly Disagree
- 4=Slightly Agree
- 5=Somewhat Agree
- 6=Strongly Agree

1. My non-classroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.
2. My non-classroom interactions with faculty have had a positive influence on my intellectual growth and interests in ideas.
3. Since starting this program I have developed a close, personal relationship with at least one faculty member.
4. I seldom meet and talk with faculty members.
5. Faculty are very accessible.
6. My interaction with faculty contributed greatly to my progress in this program.
7. I feel very comfortable in approaching faculty.
8. Faculty care about how I do in the program.
9. My relationships with faculty are very positive.
10. Faculty here have little interest in me.
11. I am satisfied with the opportunities to meet and interact informally with faculty members.

Involvement in Social Interactions

INSTRUCTIONS: For the following questions, please consider a **typical month** for you and rate **how often** you have done each of the following activities by clicking in the appropriate circle. Please use the following scale:

- 1=Never
- 2=Less than once a month
- 3= Once a month
- 4= Twice a month
- 5= Once a week
- 6=Twice a week or more

1. Attended departmental social events with other fellow students.
2. Attended informal dinners and get-togethers with other fellow students.
3. Attended graduate student associations' socials.
4. Participated in campus clubs, student organizations, or student government.
5. Met with students to talk about course work, plans of work, and faculty.
6. Participated in other social activities involving graduate students and/or faculty.

Intention to Complete

INSTRUCTIONS: For the following questions, please rate **how strongly you agree or disagree** with each of the following statements by clicking in the appropriate circle. Please use the following scale:

- 1=Strongly Disagree
- 2=Somewhat Disagree
- 3=Slightly Disagree
- 4=Slightly Agree
- 5=Somewhat Agree
- 6=Strongly Agree

1. I question whether I made the right decision to engage in graduate study.
2. I am confident I made the right decision to enroll in this program.
3. I intend to earn my graduate degree either here or at another university.
4. I doubt that I can successfully complete requirements for this program.
5. I am sure that I will complete this degree program.

Personal Characteristics

What is your present status in your program?

- Master's student non thesis option

- Master's student thesis option
- Other

How many semesters **including this one** have you been enrolled in your current degree program?

- First semester
- 2 - 3 semesters
- 4 - 5 semesters
- 6 - 7 semesters
- More than 7 semesters

How many credit hours have you earned in your current degree program including this semester?

- 1-9
- 10-19
- 20-29
- 30-39
- 40-49
- More than 49

Which of the following is correct for you?

- I have been enrolled in this program on a continuous basis
- I have interrupted my coursework for one or more semesters

Please indicate your enrollment status:

- Full-time student most semesters
- Part-time student most semesters

What was your primary motivation for beginning this graduate program?

- Professional goals
- Personal goals
- Family expectations
- Other

Do you have an assistantship?

- Yes
- No

If yes, please indicate your appointment and the number of expected work hours per week.

While enrolled, how many hours on average do you usually spend working for pay per week (assistantship or other employment)?

- None, I don't have a job.
- 1-20 hours
- 20-40 hours
- More than 40 hours

How have you financed the majority of your graduate education?

- University teaching, graduate or research assistantship
- Full tuition reimbursement from my employer
- Partial tuition reimbursement from my employer
- Full scholarship, fellowship or other university tuition program
- Combination of resources i.e. grants, loans, scholarships or Other
- Personal or family funds

What is your gender?

- Male
- Female

What is your age as of today?

How do you identify yourself? Please select all that apply.

- American Indian/Native American
- Asian/Asian American
- Black/African-American
- Hispanic/Latino
- Pacific Islander/Native Hawaiian
- White/Caucasian (Non-Hispanic)
- Prefer not to answer
- Other

Please indicate your current status below:

- U.S. citizen or permanent resident
- International student
- Other

How long in total do you anticipate it will take you to earn your degree?

- 1 year or less
- 1 ½ to 2 years
- 2 ½ to 3 years
- 3 ½ to 4 years
- 4 ½ to 5 years
- 5 ½ or more

The amount of time needed for me to graduate is...

- Less than I originally expected
- About the same as I originally expected
- More than I originally expected
- Unsure

Is your graduate program

- Campus based
- Online based
- Mixed campus and online

Are you assigned an office space?

- Yes
- No
- Online/Distance Student
- Other

If you have an assigned office space, how many students (including yourself) share this office space?

In a traditional cohort program, students are selectively admitted by department faculty or program administrators and organized into a group. The department then recognizes the group as an official "cohort" whereby students enter the program together; are registered for classes by the department as a group; proceed through all or the majority of classes together and generally complete the program/requirements as a group.

Are you a member of an official cohort program?

- Yes
- No

Ending Statement

Thank you for your participation in this survey. To better understand the answers given to us we are looking for 10 -20 participants to take part in an interview regarding your graduate school experience.

Each interview will last about an hour. Interviews will be conducted either over the telephone or on a remote communication tool (such as Skype). During the interview, we will ask you a number of questions about your graduate student experience.

If you are interested, please provide us with either a contact phone number or e-mail. Any information provided will remain completely confidential

Closing Message

Thank you for your participation in this research!

To enter your e-mail to receive one of 50 \$5 gift cards please click on the link below

<http://formsmarts.com/form/wg1>

Note filling out the form does not guarantee you a gift card, you must be one of the first fifty to fill out the survey.

The goal of this questionnaire was to gather information on graduate students social experiences and relationships in their graduate degree program to assess whether students who are more connected to their department and who have better relationships with their peers, advisors and other faculty members are more satisfied with their programs and more likely to complete their program. Current research has found that these things are important in graduate student success. All results will be grouped together; therefore individual results are not available. Your participation, including your name and answers, will remain absolutely anonymous, even if the report is published.

For additional questions regarding this research please contact:

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For questions about research subjects' rights please contact:

Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall,
Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Jerry Jaax, Associate Vice President for Research Compliance and University Veterinarian, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Appendix B - Graduate Director Survey

Opening Instructions:

The purpose of this study is to explore factors of online course design and social integration of graduate students. The information we gain through this research will help give us a better understanding of how online programs are designed and delivered. To assess this we are asking you to complete a short **5 min** questionnaire.

Participation in this research is strictly voluntary and you may exit the survey anytime. Responses are completely anonymous. By clicking on the button below you indicate that you have read and understand this consent form, and willingly agree to participate in this study under the terms described.

Thank you, we really appreciate your help!

Survey Questions

Question 1:

For this survey please use the following definitions:

Interaction: (Verb) the activity of being with and talking to other people and the way that people react to each other

Relationship: (Noun) the way in which two or more people, talk to, behave toward, and deal with each other

Please consider how important each of the following statements are as you think about the planning and current management and delivery of your online graduate program.

1 - Not Important At All | 2 - Somewhat Not Important
3 - Slightly Not Important | 4 - Slightly Important | 5 - Somewhat Important
6 - Strongly Important

1.1 Interaction between students is important

1.2 The relationships between students are important

1.3 The interaction between yourself/instructors and students is important

1.4 The relationships between yourself/instructors and students is important

Question 2:

For the following questions you will be asked to consider the use of different components in your **online** graduate program both at the programmatic and course level. Please use the following guides when answering the questions.

Programmatic level: Components used within the graduate program as a whole, targeted to all students in the program regardless of the individual courses they may be enrolled in.

Course Level: Components used by instructors within and for their individual courses, targeted to students enrolled in a specific course.

Which of the following components are used in the online graduate program?

- 1 - Used at the programmatic level | 2 - Used in a program course
3 - Used both at programmatic and course level

- 2.1. Face-to-face interaction
- 2.2. Asynchronous text communication (E-mail, discussion boards)
- 2.3. Online Collaborative Sharing (Blogs, Wikis, Document sharing)
- 2.4. Synchronous Video Communication (Skype)
- 2.5. Synchronous text communication (Instant messaging, Chat room)
- 2.6. Social Networking site (Facebook, LinkedIn, Twitter)
- 2.7. Other

Question 3:

For these components, were any chosen specifically for the *purpose of encouraging interaction and discussion* either between yourself/instructors and students, or between students?

- 1 - Used at the programmatic level | 2 - Used in a program course
3 - Used both at programmatic and course level

- 3.1. Face-to-face interaction
- 3.2. Asynchronous text communication (E-mail, discussion boards)
- 3.3. Online Collaborative Sharing (Blogs, Wikis, Document sharing)
- 3.4. Synchronous Video Communication (Skype)
- 3.5. Synchronous text communication (Instant messaging, Chat room)
- 3.6. Social Networking site (Facebook, LinkedIn, Twitter)
- 3.7. Other

Question 4:

Please rank the components that, at the *programmatic level*, you felt were effective at achieving interaction and discussion either between yourself and your students, or between students.

A choice of 1 signifies most effective.

- Face-to-face interaction
- Asynchronous text communication (E-mail, discussion boards)
- Online Collaborative Sharing (Blogs, Wikis, document sharing)
- Synchronous video communication (skype)
- Synchronous text communication (instant messaging, chat room)
- Social Networking site (Facebook, linkedin, twitter)
- Other choice

Question 5:

Please rank the components that, at the *program course level*, you felt were effective at achieving interaction and discussion either between yourself/instructor and your students, or between students.

A choice of 1 signifies most effective.

- Face-to-face interaction
- Asynchronous text communication (E-mail, discussion boards)
- Online Collaborative Sharing (Blogs, Wikis, document sharing)
- Synchronous video communication (skype)
- Synchronous text communication (instant messaging, chat room)
- Social Networking site (Facebook, linkedin, twitter)
- Other choice

Question 6:

Please indicate on a scale of 1-5 how often these components are used *at the programmatic level*.

1 - Daily or every other day | 2 - Weekly
3 - Two to three times a month | 4 - Once a month | 5 - Less than once a month.

- 6.1. Face-to-face interaction
- 6.2. Asynchronous text communication (E-mail, discussion boards)
- 6.3. Online Collaborative Sharing (Blogs, Wikis, Document sharing)
- 6.4. Synchronous Video Communication (Skype)
- 6.5. Synchronous text communication (Instant messaging, Chat room)
- 6.6. Social Networking site (Facebook, LinkedIn, Twitter)
- 6.7. Other

Question 7:

Please indicate on a scale of 1-5 how often these components are used at the program course level.

1 - Daily or every other day | 2 - Weekly
3 - Two to three times a month | 4 - Once a month | 5 - Less than once a month.

- 7.1. Face-to-face interaction
- 7.2. Asynchronous text communication (E-mail, discussion boards)
- 7.3. Online Collaborative Sharing (Blogs, Wikis, Document sharing)
- 7.4. Synchronous Video Communication (Skype)
- 7.5. Synchronous text communication (Instant messaging, Chat room)
- 7.6. Social Networking site (Facebook, LinkedIn, Twitter)
- 7.7. Other

Closing Message

Thank you for your participation in this research. The goal of this questionnaire was to gather information on planned components that are used in online programs that are designed to increase student interaction and whether or not professors think student interactions and relationships are important. Current research has found that this social interaction contributes to online graduate student success. Your participation was important in helping researchers understand these factors within the graduate student experience.

Final results will be available from the investigator, Danielle Hammond. You may contact me at hammond@ksu.edu to receive an email copy of the final report. All results will be grouped together; therefore individual results are not available. Your participation, including your name and answers, will remain absolutely confidential, even if the report is published.

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