

A Quasi-Experiment of a Residential Learning Community for College of Agriculture Freshmen

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Abstract

A learning community was established to assist freshmen transition to college life. Students participated in activities designed to impact academic achievement, persistence, and psychosocial development. A quasi-experimental study found participants had significantly lower GPAs than equivalent cohorts, persisted at higher rates, and students' psychosocial development was not impacted.

Introduction and Theoretical Framework

The primary mission of universities is to promote student learning and personal development. Previous research has demonstrated that a large part of learning takes place outside the classroom. In an effort to create an environment supportive of learning in a holistic manner, many institutions have turned to residence-based programs to promote learning, both in and out of the classroom (Schroeder, Mable, & Associates, 1994).

A learning community is a reorganization of curriculum to link together course work in order to increase interaction with faculty and other students (Gabelnick, MacGregor, Matthews, & Smith, 1990). Residential learning communities consist of academic (the curriculum content), physical (the place where the community lives), and social (the interpersonal relations among students and faculty) components. Integrating these components was thought to promote the development of students' professional, ethical, and civic responsibilities (Bower & Dettinger, 1998).

Although there are several different models of learning communities, they all emphasize common themes of community, social learning theory, and collaborative learning. The definitions and forms of modern learning communities promote the idea of *connected knowledge* through the creation of curriculum that supports learning as an integration of social factors (Shapiro & Levine, 1999). A residential learning community is an adaptation of the learning community model. It is a living space, with intentional academic programming and services, provided to students within residence with the goal of incorporating activities that strive toward continuous improvement, establishing campus community, and enhanced learning (Shapiro & Levine, 1999).

Some advantages of residential learning communities include opportunities for interaction among a diverse group of students, assisting undecided students choose a major, and offering freshmen integration and consistency that they lack during their first year away from home (Schroeder, Mable, & Associates, 1994). MacGregor, Linndblad, and Tinto (2000) conducted a meta analysis of 70 assessment studies covering several different types of learning communities and concluded that students who participated in learning communities achieved academic success at higher rates than non-learning community students.

Learning communities have also been found to have a positive effect on student persistence. In a study conducted by Gabelnick, et al., (1990) 41% of all students dropped out of the university before graduation, with the highest drop out rate reported for freshmen during their first term. Pike, Schroeder, and Berry (1997) found that learning community students had more interactions with faculty and peers and were retained at significantly higher levels than commuter students. Tinto (1987) reported that student involvement, both academic and social, was a critical factor for persistence.

Learning communities have the potential to create a setting that encourages the transition from high school to college, as Gabelnick, et al., (1990) found when comparing learning communities to less structured situations. Retention rates averaged ten to twenty percent higher for learning communities. Pascarella and Terenzini (1981) found similar results when studying

freshmen in a learning community. The program had a significantly positive effect on participants' academic achievement, retention to sophomore year, and attitudes toward the curriculum.

In line with the recent movement to encourage student learning and personal development, a major land-grant university agricultural college created a residential learning community Fall 2000 and named the program *Freshmen In Transition* (FIT). An evaluation study was designed to determine the impact of the program on participants' academic achievement, retention, and psychosocial development.

This study was situated in the work of Chickering (1969), who identified a unique developmental stage among 18- to 24-year old American college students known as the *young adult*. Young adulthood should be examined separately as the developmental tasks were found to be different from those of adolescence and adulthood. Chickering and Reisser (1993) proposed seven developmental factors for the young adult: developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing identity.

A Description of the *Freshmen in Transition* Program

The FIT program was designed to encourage freshmen with agricultural majors to live together in a residential community for one academic year. Volunteer Student Academic Mentors (SAMs) also resided in the residence hall and provided support to the freshmen. The SAMs were all sophomores and were responsible for holding weekly small group meetings (8 students per group) with participants, for collecting data regarding involvement in the required activities, and for assisting students on an individual basis as needed.

The FIT students were required to participate in activities sponsored by the university such as allied arts, health and wellness programs, clubs and organizations, intramural sports, faculty discussions, socials, community service, leadership activities, and career development presentations. Students were also required to attend in-house tutoring sessions and to report their grades to their SAMs periodically. The FIT program was supported with a web site to inform students of upcoming activities. Additional guidance and support came from an advisory council and a judiciary board, which also provided formative evaluation feedback to the program director.

Two faculty members were assigned as liaisons to the program. They frequently ate lunch with students in the residence hall cafeterias and meet informally with students in the residence hall. The faculty did not present formal lessons to the FIT students as the interaction was designed to be informal and supportive in nature.

Treatment for the FIT students began on July 21, 2000, at a 3-day camp devoted to introduce first time freshmen to university traditions and provided students opportunities to interact with each other. During the first eight weeks of fall 2000, all agricultural college freshmen participated in an orientation course. Some of the students in the control groups

attended the camp as well as participated in the orientation course. Once the orientation course was over, the control groups did not receive any further interventions.

A program coordinator managed the program and served as the primary data collection agent. The unique position of the program coordinator allowed her to participate in most of the FIT activities. Objectivity within the study was maintained through peer debriefing with faculty members and the use of quantitative measures for psychosocial development, academic achievement, and persistence.

Purpose and Objectives

The purpose of the study was to determine the impact of the Freshmen In Transition program on the participants' academic achievement, retention, and psychosocial development. The following hypotheses guided this study:

- ❖ Ho₁: FIT participants' academic achievement will be significantly greater than non-participants' academic achievement.
- ❖ Ho₂: FIT participants' retention will be significantly greater than non-participants' retention.
- ❖ Ho₃: FIT participants' psychosocial development will be significantly greater than non-participants' psychosocial development.

Methods and Procedures

The study used a quasi-experimental pre-test-posttest non-equivalent group design to determine the effects of the program on participants' academic achievement, persistence, and psychosocial development during the 2000-2001 academic year (Figure 1). This design allowed the researchers to compare three groups, FIT students, traditional residence freshmen, and freshmen who applied to the program, but were not selected and who chose to live on campus.

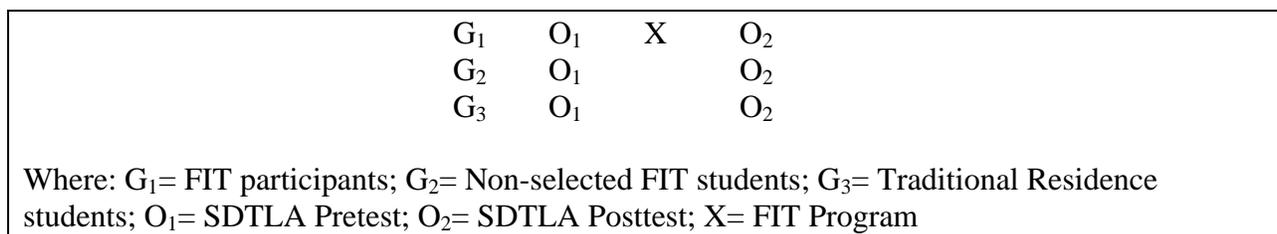


Figure 1. Study design.

The population for the study included all agricultural college freshmen admitted for the 2000-2001 academic year who lived on campus and graduated from high school in 2000 (N=285). Sampling was done in two phases for the treatment group. In the first phase all freshmen admitted into the college were sent information about the FIT program and were asked to indicate their preference for participating in the program. Of the 120 students who agreed to participate in the program, 72 were assigned to the program (FIT students, treatment group, n=72). The remaining students were sent a letter informing them they had not been chosen for

the program. Of the 48 students who initially chose to participate in the program but who were not selected, three enrolled in another college within the university and 10 students did not attend the university. The remaining individuals comprised the not selected FIT freshmen control group ($n=30$). Traditional residence freshmen who opted not to participate in the program served as an additional control group for the study ($n=165$).

The Student Developmental Task and Lifestyle Assessment (SDTLA) instrument was adopted for the pre-test and posttest to assess students' psychosocial development. Winston, Miller, and Cooper (1999) developed the instrument to assess the level of psychosocial development of college students between the ages of 17 and 25. Internal consistency was estimated by collecting data from 1,822 students in 32 colleges during the fall and spring of 1994-1995 and spring 1996. Alpha coefficients ranged from .88 to .62.

The SDTLA was comprised of three developmental tasks, 10 subtasks, and two scales. A task is an "interrelated set of behaviors and attitudes that the culture specifies should be exhibited at approximately the same time by a given age cohort in a designated context" (Winston, Miller, and Cooper, 1999, p. 10). A subtask is "a more specific component or a part of a larger developmental task" (p. 10). A scale is "the measure of the degree to which students report processing certain behavioral characteristics, attitudes, or feelings, but may not be directly affected by the higher education environment" (p. 10).

The Establishing and Clarifying Purposes Task scores revealed the extent in which students had thoroughly explored their career and lifestyle goals and plans as well as showed an interest and active participation in culturally diverse activities. This task consisted of four subtasks: Educational Involvement, Career Planning, Lifestyle Planning, and Cultural Participation.

The Developing Autonomy task measures students' ability to make decisions academically and emotionally without continuous reassurance or extensive help from others and realize there is a reciprocal relationship between the individual and his/her community. This task is comprised of four subtasks: Emotional Autonomy, Interdependence, Academic Autonomy, and Instrumental Autonomy.

The Mature Interpersonal Relationship Task measures the degree to which students have developed trusting, open, and honest relationships with peers and show acceptance and respect for different cultures, races, backgrounds, beliefs, lifestyles, and appearances. This task is comprised of two subtasks: Peer Relationships and Tolerance.

The two scales are the Salubrious Lifestyle Scale (health and wellness) and the Response Bias scale. A high score on the response bias scale means that the student may not have told the complete truth about himself or herself; thus, instruments with a score of four on the response bias scale were not included in the study (Winston, Miller, & Cooper, 1999).

The researchers administered the SDTLA to participants in August 2000 (pre-test) and again in April-May 2001 (posttest). The pre-test was administered to the FIT students prior to the summer camp and the remaining CASNR freshmen during the college freshmen orientation

class. The posttest was administered to all FIT students in their residence hall. Several course instructors were contacted and asked permission by the researchers to solicit participation from control group students after they had completed their final exams. Twenty-five students completed the SDTLA using this process. To gather additional data, the Associate Dean of Academic Affairs for CASNR sent a letter to the remaining 170 students in the control groups asking them to take the SDTLA in a set meeting room the week before finals. The researchers waited in the room from 8:00 am until 5:00 p.m. for 5 days. Eight students came to take the SDTLA during the week.

Students' high school grade point averages, ACT composite scores, retention records, and fall and spring 2000-2001 grade point averages earned while attending the university were collected from the registrar's office.

The quantitative data were analyzed using Microsoft Excel[®] (1997) for Windows. An alpha level of .05 was established a priori to determine statistical significance. Descriptive statistics and one-tailed independent samples t-tests were used to describe the SDTLA data, academic achievement, and retention.

Findings

Academic Achievement. The three groups were compared for differences in cumulative high school grade point averages, composite ACT scores, and university grade point averages using one-tailed t-tests. The traditional residence students had significantly higher spring 2001 grade point averages than the FIT students. All other variables were not significantly different from each other (Table 1).

Table 1: *Comparison of Academic Factors of FIT Students versus Traditional Residence Students*

Group	n	m	t
Cumulative high school GPA			
FIT	70	3.62	0.49
Traditional residence	158	3.64	
Composite ACT score			
FIT	72	24	1.20
Traditional residence	158	25	
Fall 2000 GPA			
FIT	72	2.81	-0.25
Traditional residence	165	2.77	
Spring 2001 GPA			
FIT	65	2.77	1.93*
Traditional residence	141	3.02	

Note: * $p < .05$, one-tailed. t = Independent samples t -test between academic factors of FIT students and Not Selected FIT students.

The not selected FIT students had significantly higher high school cumulative grade point averages, composite ACT scores, and fall and spring grade point averages than the FIT students. (Table 2).

Table 2: *Comparison of Academic Factors of FIT Students versus Not Selected FIT Students*

Group	n	m	t
Cumulative high school GPA			
FIT	70	3.62	3.50*
Not Selected FIT	29	3.83	
Composite ACT score			
FIT	72	24	2.10*
Not Selected FIT	30	26	
Fall 2000 GPA			
FIT	72	2.81	1.94*
Not Selected FIT	30	3.17	
Spring 2001 GPA			
FIT	65	2.77	2.38*
Not Selected FIT	26	3.23	

*Note: *p<.05, one-tailed. t= Independent samples t-test between high school grade point averages, composite ACT scores, and fall 2000 and spring 2001 grade point averages of FIT Students and Not Selected FIT Students.*

Persistence. Of the 165 traditional residence freshmen who enrolled Fall 2000 four withdrew from the university during the fall semester, six transferred to another college within the university spring 2001 and 14 students did not return to the university after completing fall semester. Therefore, 141 students were retained in the college (85%) and 147 traditional residence students were retained within the university (89%) for the 2000-2001 academic year.

Of the 48 students who applied for the FIT program but were not selected, 10 did not enroll in the university and three enrolled in another college at the university fall 2000. The remaining 35 not selected FIT freshmen did enroll in the agricultural college fall 2000. Five of the 35 lived off campus; thus, they did not fit the criteria for inclusion in the study. Therefore, 30 not selected FIT students lived in traditional residence halls and were enrolled in the college fall 2000. Two of the 30 students transferred to another college within the university and two students did not come back to the university spring 2001. Therefore, 26 of the not selected FIT freshmen (87%) were retained in the college and 28 students were retained within the university (93%) for the 2000-2001 academic year.

The FIT students persisted at higher rates than both control groups. Of the 72 FIT students who enrolled in the college fall 2000, three transferred to another university spring 2001 semester, one transferred to the honors residence at the university but was retained in the college. One transferred to another college within the university spring 2001. Two male students were removed from the program but were retained in the college for spring 2001. Therefore, 65 students were retained in the FIT program (90%), 68 were retained in the college (94%), and 69 were retained within the university (96%) for the 2000-2001 academic year.

Psychosocial Development. The FIT program did not have a positive effect on the students' psychosocial development. When comparing FIT students to traditional residence students there were significant differences in the Mature Interpersonal Relationships Task and Salubrious Lifestyle Scale. All other factors were not statistically significant. The pre-test and the posttest means showed that the FIT students scores' decreased over time in seven of the 14 areas, although not significantly (Table 3).

When comparing FIT students and not selected FIT students, none of the factors were statistically significant. However, when comparing the pre-test and posttest means, the FIT students' scores decreased in seven of the 14 areas, and the not selected FIT students decreased in four of the 14 areas although none of the decreases were statistically significant (Table 4).

Table 3: *Comparison of Pretest and Posttest Differences of the SDTLA of FIT Students versus Traditional Residence Students*

Group	n	m		t
		Pretest	Posttest	
Career planning subtask				
FIT	62	2.82	3.06	-0.08
Traditional residence	25	2.80	3.03	
Lifestyle planning subtask				
FIT	62	3.34	3.38	0.28
Traditional residence	25	3.39	3.48	
Cultural participation subtask				
FIT	62	2.91	3.34	-0.56
Traditional residence	25	2.54	2.85	
Educational involvement subtask				
FIT	62	2.95	3.44	-0.77
Traditional residence	25	2.88	3.24	
Establishing and clarifying purpose task				
FIT	62	3.02	3.30	-0.36
Traditional residence	25	2.93	3.17	
Instrumental autonomy subtask				
FIT	62	3.37	3.47	-0.27
Traditional residence	25	3.41	3.46	
Emotional autonomy subtask				
FIT	62	3.71	3.54	1.26
Traditional residence	25	3.56	3.56	
Academic autonomy subtask				
FIT	62	3.83	3.52	0.90
Traditional residence	25	3.91	3.74	
Interdependence subtask				
FIT	62	3.33	3.36	0.10
Traditional Residence	25	3.12	3.16	
Developing autonomy task				
FIT	62	3.58	3.47	1.37
Traditional residence	25	3.43	3.47	

Table 3: *Continued*

Group	n	m		t
		Pretest	Posttest	
Peer relationships subtask				
FIT	62	3.75	3.73	0.93
Traditional residence	25	3.63	3.73	
Tolerance Subtask				
FIT	62	3.36	3.28	1.51
Traditional Residence	25	3.17	3.30	
Mature Interpersonal Relationships Task				
FIT	62	3.54	3.47	1.71*
Traditional Residence	25	3.37	3.48	
Salubrious Lifestyle Scale				
FIT	62	3.26	3.11	1.76*
Traditional Residence	25	3.22	3.32	

Note: * $p < .05$, one-tailed; $t =$ Independent samples t -test between gain scores of Freshmen In Transition Students and Traditional Residence Students

Table 4: *Comparison of Pretest and Posttest Differences of the SDTLA of FIT Students versus Not Selected FIT Students*

Group	n	m		t
		Pretest	Posttest	
Career planning subtask				
FIT	62	2.82	3.06	0.24
Not Selected FIT	8	2.63	2.91	
Lifestyle planning subtask				
FIT	62	3.34	3.38	0.42
Not Selected FIT	8	3.38	3.55	
Cultural participation subtask				
FIT	62	2.91	3.34	0.30
Not Selected FIT	8	2.31	2.85	
Educational involvement subtask				
FIT	62	2.95	3.44	1.07
Not Selected FIT	8	2.64	3.35	
Establishing and clarifying purpose task				
FIT	62	3.02	3.30	0.94
Not Selected FIT	8	2.78	3.18	
Instrumental autonomy subtask				
FIT	62	3.37	3.47	0.82
Not Selected FIT	8	3.35	3.60	
Emotional autonomy subtask				
FIT	62	3.71	3.54	0.77
Not Selected FIT	8	3.67	3.61	
Academic autonomy subtask				
FIT	62	3.83	3.52	0.29
Not Selected FIT	8	3.95	3.72	

Table 4: *Continued*

Group	n	m		t
		Pretest	Posttest	
Interdependence subtask				
FIT	62	3.33	3.36	1.25
Not Selected FIT	8	2.83	3.14	
Developing autonomy task				
FIT	62	3.58	3.47	1.40
Not Selected FIT	8	3.37	3.51	
Peer relationships subtask				
FIT	62	3.75	3.73	0.06
Not Selected FIT	8	4.03	4.01	
Tolerance subtask				
FIT	62	3.36	3.28	0.52
Not Selected FIT	8	3.13	3.13	
Mature interpersonal relationships task				
FIT	62	3.54	3.47	0.26
Not Selected FIT	8	3.52	3.49	
Salubrious lifestyle scale				
FIT	62	3.26	3.11	1.47
Not Selected FIT	8	3.16	3.34	

Note: * $p < .05$, one-tailed. t = Independent samples t -test between gain scores of Freshmen In

Transition Students and Not Selected Freshmen In Transition Students

Limitations

The findings of this study should only be applied to the situation at the university, as the research did not extend beyond this institution. Analytical generalizations can be applied to other major universities with residential populations of traditional students to the extent that other programs resemble the FIT program.

The results of this study must also be considered subject to selection bias as students self-selected into the FIT program. It should also be noted that the number of participants in the control groups was smaller than recommended for statistical analysis.

The long-term conclusions about the effects of the FIT program should be explored through longitudinal designs that can capture the complexities of causal relationships between a learning community intervention and academic success and psychosocial development.

Conclusions

Despite these limitations, the findings of this study support the literature on academic achievement and psychosocial development: that learning communities do not always promote learning or maturation among participants (Hood, 1984; MacGregor, Linndblad, & Tinto, 2000). There are several explanations for the lack of academic achievement and personal growth among

the FIT students despite the fact that several opportunities were made available to students for achieving these goals. The FIT program had mandatory tutoring sessions for the students enrolled in biology, chemistry, and math; however, many participants did not use the tutors effectively. Some students would sign-in and leave, while others were disruptive during the sessions.

Moreover, many students focused on meeting the required list of activities, which were designed to increase integration, as a *to do* item to be checked off without further reflection on the intent of the activities. Chickering (1975) argued that integration could be cultivated by providing students with opportunities for reflection where they are taught to see relationships among the required experiences and problem solving in other areas of their lives. It is unclear to what extent reflection was taught and practiced within the SAM small group meetings even though this would have been the ideal opportunity for such mentoring.

Equivalence was not established between the treatment (FIT students) and control (not selected FIT students) groups. There were significant differences in high school grade point averages and composite ACT scores, perhaps leading to the significantly lower collegiate grade point averages for both semesters. However, equivalence was established between the FIT students and the traditional residence students (no significant difference in high school grade point average or ACT composite scores), indicating that the FIT program negatively impacted participants' spring 2001 grade point averages; perhaps by requiring activities that were not related to academic achievement.

The significantly higher retention rate for FIT students can be accounted for by early and increased social activity within the program. FIT students were encouraged to interact with each other through the required activities and during the weekly SAM group meetings, which were not provided to the traditional residence hall students. The SAMs provided several opportunities for social engagement such as faculty discussions, group events, parties, and cookouts. The literature was consistent with this finding in that residence hall students were more likely to persist than other students (Chickering, 1975; Pike, Schroeder, & Berry, 1997).

FIT students appeared to regress psychosocially rather than advance when examining the mean scores of the SDTLA for the pre- and posttests in seven of the 14 factors (Table 3). This finding contradicts what was expected, as maturation over time should have indicated a positive gain in psychosocial development regardless of interventions. The FIT students; however, were significantly different in two areas of development: Mature Interpersonal Relationships tasks and Salubrious Lifestyles scale (health and wellness variable). FIT students were encouraged to rely on each other, to the exclusion of others outside the FIT program (note the decline in tolerance subtask means for FIT students from 3.36 to 3.28). Ethnic and cultural diversity were not strong suits of the program either. All participants were agricultural majors and 96% were white.

The FIT program implemented guidelines that may have counteracted developing autonomy among the students. They were required to externally document completion of weekly requirements by having an authority figure at the event sign a slip confirming attendance. These slips were then collected by the SAMs and given to the program coordinator. FIT students were also under contract to complete the requirements. If the contract was broken, then students risked

being evicted from the residence hall. The SAMs were often forced into a policing role rather than a mentoring role in tracking requirements and controlling undesirable behavior such as alcohol consumption among some students.

Recommendations

The findings and conclusions of this study serve as a basis for making the following recommendations for practice and research to improve the program's impact on students' grades and maturation. Students should not be required to participate in on-campus activities, but rather encouraged to get involved by community leaders. Small group leaders should focus on reflective activities during weekly meetings to encourage integration of experiences that will foster maturation among young adults (Chickering, 1975).

More emphasis should be placed on academic success than on completing activities. Students should be rewarded for achieving a GPA above the mean each semester. Academic success can be aided by tutoring, but requiring students to attend tutoring sessions proved to be ineffective. Students should be encouraged to seek out tutoring that addresses their specific needs. Workshops that focus on improving academic skills should be offered to students in residence.

Additional research should be conducted to examine the factors that contributed to the marginal academic achievement of the FIT students. This study should also be extended into a longitudinal study where the FIT students are tracked over their college careers to determine long-term impacts of the program. Qualitative data should also be collected to capture the depth and richness of the program from the students' perspective.

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