

Academic Achievement of Freshmen as a Function of Residence Hall Housing

Differences in academic achievement and difficulty in school is studied for freshman residence hall versus non-residence hall students.

The impact of on-campus housing on academic achievement has been a particularly difficult relationship to clearly elucidate. It is generally accepted that residence hall students fare better academically than their non-residence hall counterparts (Moos, 1979; Pantages & Creedon, 1978).

Earlier studies showed that students living in residence halls obtained higher year-end grade point averages than those living in off-campus housing such as apartments, rooming houses, parents' houses, and fraternities/sororities (Ludeman, 1940; Matson, 1963; Peterson, 1943; Stickler, 1958). Each of these studies failed to control for self-selection factors (i.e. possible initial differences in aptitude/achievement); hence, the comparisons were largely uninterpretable. Other studies controlling for initial differences substantiated these original studies and indicated that residence hall students obtained significantly better grade point averages than off-campus students (Alfert, 1966; Crew & Giblette, 1965; Freed, 1965; Griffeth, 1958; Smallwood & Klas, 1974; Welty, 1974).

Although the bulk of these studies suggest that residence hall socialization is conducive to academic success, some other studies have not supported these findings (Dollar, 1967; Graff & Cooley, 1970; Perusok & Walsh, 1964). Several studies analyzing academic achievement of residence hall students and non-residence hall students by gender also showed contradictory results.

Kenneth M. Nowack, Office of Residential Life, University of California, Los Angeles, Los Angeles, CA 90024. Alan L. Hanson, Office of Residential Life, University of California, Los Angeles, Los Angeles, CA 90024

No clear-cut trends emerge from these studies beyond the consistent findings that women are more academically successful than men outside the residence halls (Astin, 1978). For example, Griffeth (1958) found that male residence hall students had significantly higher GPAs compared to non-residence hall students, whereas there was no difference by place of residence in females. Baird (1969), on the other hand, reported just the opposite. He found that females living off-campus had significantly higher grade point averages than those living on-campus and that there were no differences, by place of residence, in male students.

Given the current economic, educational, programmatic, and student development emphases of most residence life programs for on-campus students, it would be helpful to better understand what factors may contribute to student academic achievement and persistence. Although the majority of studies support the notion that residence hall students are a lower risk for academic failure and attrition, few studies have tried to assess academic achievement beyond grade point average. Even fewer have tried to analyze any differences between residence hall and non-residence groups by considering the confounding variable of gender.

We attempted in this study to extend previous work and further clarify the academic achievement differences between residence hall and non-residence hall students. We improved upon earlier attempts to assess the contributions of residence living by including prevalence of probation as a second academic achievement measure beyond GPA and by analyzing the data by gender. Due to the confounding effects of prior living environment on academic achievement, only freshman class differences were analyzed.

We hypothesized that freshmen students living in the residence halls might achieve higher GPAs and experience less academic difficulty than their non-residence hall counterparts. Also we hypothesized that off-campus females would experience greater academic success than off-campus males.

METHOD

Participants. Academic achievement and difficulty were compared for 1,302 residence hall freshmen and a randomly sampled, non-residence hall criterion group of 740 students. Of the 1,302 residence hall students, 55% (719) were females and 45% (583) were males. For the non-residence sample, 54% (399) were females and 46% (341) were males. These samples approximated the undergraduate population as a whole, and as such, a diversity of racial and ethnic differences (66% White, 15% Asian, 5% Black, 5% Chicano, 8% other) were represented for the 1981-82 academic year.

Variables. Academic achievement variables were taken from the registrar's system tapes in the summer, 1982, and covered the entire academic year. Academic achievement was assessed by computing the mean GPA earned at the end of the freshman year. Academic difficulty was defined and measured in this study as the mean number of students placed on academic probation at any point during the 1981-82 year. No student was counted more than once for being on probation and no attempt was made to classify students by the number of quarters they were on probationary status.

Other relevant academic achievement variables assessed in this study included high school GPA (HSGPA), SAT-math (SATM), SAT-verbal (SATV), declared major, and number of units completed during the academic year.

Analysis. Differences between residence hall and non-residence hall freshmen were determined by the t-test. To further clarify the role that resident status played in academic achievement, a series of forward regression analyses were utilized. Separate analyses enabled determination for the relative contribution of resident status to the prediction of academic achievement. Finally, chi-square analyses were utilized to determine differences in probation frequency for residence hall and non-residence hall groups.

RESULTS

Significant differences in mean GPA in residence hall ($M = 2.64$) and non-residence hall ($M = 2.51$) freshmen were observed ($t = 3.38, p > .01$). Thus, not controlling for individual difference variables, residence hall students achieved higher GPAs than non-residence hall students.

Analysis by gender revealed that within the residence halls, males and females did not show any appreciable differences in academic achievement ($F(1, 2,802) = .896, p < .05$). This finding is consistent with previous research (Astin, 1973). For those students living outside the halls, significant gender differences were observed. Females had significantly higher GPAs than their male counterparts outside the residence halls ($F(1, 2,876) = 13.17, p < .01$).

Forward multiple regression analyses were utilized to compare the significant contribution of residence hall living to the prediction of GPA. Individual difference variables of HSGPA, SATM, and SATV were added as a block in the regression analysis. Residence hall living entered first and significantly added to the prediction of GPA accounting for approximately 1% of the variance in this dependent variable. Table 1 summarizes these regression results. Thus, for all freshmen, living in the residence halls contributes a significant, albeit modest, impact on GPA when including the academic individual difference variables.

Table 1
*Forward Regression Analysis Predicting Freshmen GPA
from HSGPA, SATM, SATV, and Residence Status*

Variable	Multiple R	R ²	R ² increase	F
Residence				
Hall Housing	.100	.010	.010	8.45*
HSGPA	.365	.133	.123	119.507*
SATM	.444	.197	.064	58.537*
SATV	.464	.215	.019	34.192*

$df = 4$
* $p < .01$

Subsequent regression analyses were performed for each gender. In the case of females, residence hall living significantly contributed to academic achievement

($R^2 = .016$, R^2 increase = .016, $F(1, 795) = 5.97$, $p < .05$). For males, residence hall living did not significantly contribute to predictions of GPA ($R^2 = .005$, R^2 increase = .005, $F(1, 662) = 2.23$, $p > .05$). Thus for males, any significant differences in academic performance between residence hall and non-residence hall students was most likely attributed to individual difference variables. Furthermore, residence hall freshmen had significantly higher SATM and SATV scores, but non-significant HSGPA scores, compared to their non-residence hall counterparts. Table 2 summarizes these findings.

Table 2
Mean Differences in HSGPA, SATM and SATV in
Freshman Residence Hall and Non-residence Hall Students

Variable	Residence Hall ($n = 1,044$)	Non-Residence Hall ($n = 535$)	t
HSGPA	3.51	3.50	1.2
SATM	546.83	534.60	12.23*
SATV	481.82	465.34	3.86*

* $p < .05$

Academic Difficulty. The percentage of students who experience academic difficulty during the year was compared in the freshmen residence hall ($n = 1,302$) and non-residence hall ($n = 740$) groups. Academic difficulty was defined as the relative percentage of freshmen placed on academic probation at any time during the academic year. Table 3 summarizes these results.

Table 3
Prevalence of Academic Difficulty in Residence
Hall and Non-Residence Hall Groups

	Residence Hall		Non-Residence Hall	
	Academic Difficulty (%)	n	Academic Difficulty (%)	n
Freshmen Total	24.81	1,302	30.95	740
Male	23.36	719	32.03	399
Female	24.26	583	25.51	341

Chi-square analysis indicated significant differences in prevalence of academic difficulty experienced in the freshmen ($X^2(1) = 8.71$, $p < .05$) sample. Thus, freshmen students who reside in the residence halls not only achieved significantly higher GPAs than their non-residence hall counterparts, but they experienced significantly less academic difficulty as well.

Subsequent analysis by gender (Table 3) revealed that male students living outside the residence halls experienced significantly more academic difficulty than their female counterparts living off-campus (32.03% versus 25.21%, respectively, $X^2(1) = 52.77, p < .05$). No such differences were observed for males and females living in the residence halls however (23.26% versus 24.26%, respectively, $X^2(1) = .195, p > .05$). These findings, using academic difficulty as an outcome measure, parallel the earlier findings with GPA. The general conclusion that male freshmen living outside the residence halls experience more academic difficulty and achieve lower GPAs than females is consistent with the earlier findings of Astin (1978).

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DISCUSSION

The results of this study tend to support the interpretation that on-campus residence halls are favorable environments for facilitating academic achievement. Freshmen residence hall students achieve significantly higher GPAs than non-residence hall students and experience significantly less academic difficulty than non-residence hall students. //

These findings must be viewed with caution. First, no attempt was made to identify the unique living situation of those students residing outside the residence halls. Second, although regression analysis supported that residence hall living contributes to predicting GPA, these contributions were only modest compared to the other individual difference variables in the regression equations.

In a recent unpublished study on academic achievement in incoming freshmen residence hall and non-residence groups, the GPAs of students who applied and were offered on-campus housing were compared with those who applied for and were randomly excluded from on-campus housing (Nunn & Holland, 1983). Freshmen applicants randomly assigned to on-campus housing earned significantly higher first quarter GPAs than freshmen excluded from on-campus housing. Due to random assignments, significant differences are most likely attributed to the effect of residence hall living. This finding supports the results reported here and tends to minimize the explanation that "wanting to live in on-campus housing" significantly contributes to academic success. Further research on what aspects of the on-campus socialization experience actually contributes to academic success is required. Such knowledge would help residential life programs to better concentrate their effort, time, and money.

The major sex differences observed in this study support the earlier work of Baird (1969). Two major trends were observed with respect to both academic achievement and difficulty by sex.

1. *Within* the residence halls, no significant differences were found in end of the year GPAs and prevalence of probation between males and females.
2. *Outside* the residence halls, females had significantly higher GPAs and experienced less academic probation than their male counterparts.

Further research is needed to clarify the significance of these differences for students outside the residence halls. Possibly some off-campus living environments favor academic success more than others. Again, understanding what factors contribute to this success or failure would be very helpful for future programming and intervention in these environmental settings.

The results of this study support the diverse educational programming efforts of residence life programs that facilitate academic achievement for their students. These results should encourage practitioners to continue their structured educational efforts within the residence halls. The findings also suggest that, in general, students choosing to live in residence halls may be slightly advantaged compared to those choosing to live elsewhere (Table 2). Thus, such students may require fewer remedial types of educational programs and more attention to developing specific learning and study skills.

Approximately one-quarter of all freshmen living in the residence halls experienced academic difficulty during the year. Although this proportion was significantly less than for those living outside the halls, it nevertheless reflects a group that requires special attention. Practitioners should make a concerted effort to identify such individuals and target programs aimed at bolstering their academic success.

In higher education, accountability for service to students will continue to be a focus of attention through the 1980s. This current research, while not definitive, reflects an overall effort to determine to what extent student development services contribute to student academic success. To the extent that the findings of this study are valid, it would appear that the efforts of systematic programming, trained staff, and planned socialization experiences are conducive to academic achievement.

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