Article

Can Peer Mentors Improve First-Year Experiences of University Students?

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Abstract

The effectiveness of a peer-mentoring program was examined at a university in California. Previous studies suggest university peer mentoring might increase students' feelings of engagement, which can contribute to their retention. Pretest and posttest data were collected from 304 freshmen (mentored and nonmentored) during the fall of 2012 in a quasi-experimental design. Results indicated mentored students felt significantly more integrated and connected to their university at the end of their first semester compared with nonmentored students. Mentees also provided qualitative responses about what they found beneficial and what they felt could be improved in the program. Results suggested peer mentoring helped the students feel more integrated and supported at college, which might reinforce their persistence toward graduating.

Keywords

university peer mentoring, retention, attrition, integration

The benefits of higher education are well documented. According to Baum, Ma, and Payea (2013), university graduates earn more money, pay more in taxes, and are less likely to be incarcerated. In addition, university graduates are less likely

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to be unemployed (United States Department of Labor - Bureau of Labor Statistics, 2011) and are less likely to rely on government assistance (Institute for Higher Education Policy, 1998). Given the value of earning a college degree for both the individual and society, it is worthwhile to examine factors that influence university retention and graduation rates.

Students drop out of college for a number of reasons, such as lower self-confidence and academic motivation (Lotkowski, Robbins, & Noeth, 2004), lower first-year grades (Bradburn & Carroll, 2002; McGrath & Braunstein, 1997; Murtaugh, Burns, & Shuster, 1999), and feeling marginalized by the campus environment (Hausmann, Schofield, & Woods, 2007; Mcgaha & Fitzpatrick, 2005; Mohr, Eiche, & Sedlacek, 1998). In addition, a lack of perceived social support (Mallinckrodt, 1988) is related to an increased likelihood of dropping out. Conversely, students' level of involvement, connectedness, and integration with the university is an important determinant of their academic persistence and success (Astin, 1975; Bean, 1980; Berger & Milem, 1999; Chapman & Pascarella, 1983; Pascarella & Terenzini, 1983; Tinto, 1997).

Peer Mentoring and University Retention

A peer mentor is a person who provides guidance, support, and practical advice to a mentee who is close in age and shares common characteristics or experiences (Beltman & Schaeben, 2012; Kram, 1983). A university peer-mentoring program is an intervention strategy that pairs one or more students (i.e., mentees) with a more experienced student (i.e., peer mentor; Terrion & Leonard, 2007) who provides both practical guidance and social support to the mentee(s) (Bozeman & Feeney, 2007; Nora & Crisp, 2007). Peer-mentoring programs are designed to foster positive outcomes (Terrion & Leonard, 2007), including higher academic achievement and social acclimation (Leidenfrost, Strassnig, Schabmann, Spiel, & Carbon, 2011; Zalaquett & Lopez, 2006). The emphasis on a personal, emotionally supportive relationship is what qualitatively separates mentoring from other forms of training or tutoring (Karcher, Kuperminc, Portwood, Sipe, & Taylor, 2006). According to Tinto's social integration theory, when students feel more integrated in their classes and university, they are more likely to persist and graduate (Tinto, 1975, 1993). Studies have shown that university-based peer-mentoring programs, especially during the first year, can help students feel more connected and integrated to the university (Glaser, Hall, & Halperin, 2006), which increases student retention (Ward, Thomas, & Disch, 2010) and their likelihood of graduating (ACT Incorporated, 2010). Also, studies comparing college students with and without peer mentors found that students with peer mentors had significantly better grades (Rodger & Tremblay, 2003), lower failure rates, and better retention (Chester, Burton, Xenos, & Elgar, 2006; Goff, 2011; Hu & Ma, 2010; Leidenfrost et al., 2011; Ward et al., 2010).

In addition, Salinitri (2005) found that peer-mentoring programs have been successful in improving academic achievement of low achieving, first-year students.

Pascarelli (1998) notes that mentors establish trust, demonstrate empathy, and function as a guide, advocate, and supporter to their mentees. When this occurs on a university campus, the peer mentors can assist first-year students by providing emotional support, increasing feelings of connectedness on campus, and promoting integration within the campus community. Thus, it is not surprising that peer-mentoring programs have been successful in increasing social integration and satisfaction with the university (Allen, McManus, & Russell, 1999; Sanchez, Bauer, & Paronto, 2006) and promoting more positive attitudes regarding academic, social, and career goal attainment (Sanchez et al., 2006; Ward et al., 2010). Also, mentees were generally satisfied with their mentors and the mentoring experience such as academic support or advice, social support, and help in handling stressful situations (Allen et al., 1999; Grant-Vallone & Ensher, 2000; Hughes & Fahy, 2009; Salinitri, 2005).

The Peer-Mentoring Program

This study presents the results of an evaluation of a university peer-mentoring program for students in a freshmen-level class designed to prepare first-year students for their college career. The peer-mentoring program was one component of a federally funded, university-wide program designed to help students succeed. Freshmen at the university were given the opportunity to enroll in a UNIV 100 course (i.e., introductory course designed to familiarize freshmen with a college environment and help them prepare for the rest of their academic career).

For the fall 2012 semester, there were 52 sections of UNIV 100. Nineteen of these sections were devoted to freshmen taking part in the peer-mentoring program. The freshmen in the remaining sections still completed one semester of UNIV 100 but were not assigned a peer mentor. This nonmentored cohort served as a comparison group for the purpose of evaluation.

Some of the sections were part of the peer-mentoring program, which placed them into a cohort that takes two classes together during their first semester. The mentee cohorts were discipline based, meaning that the mentees were grouped together according to their intended majors. There were also cohorts for students who had not yet declared a major.

Potential mentors were recruited either after they successfully completed the program as mentees or by responding to flyers in the Educational Opportunities Program office or various advisement offices. They were required to have a cumulative grade point average of at least 3.0 and to have strong interpersonal skills. It was desirable, but not necessary, that applicants had prior experience in mentorship roles. In addition, mentors were screened based on the major they

were in so they could be matched with the appropriate discipline-based cohort (unless they were assigned to a cohort of undecided freshmen). Once they were hired, mentors completed a training course on effectively meeting the needs of their mentees. This training was instituted because one of the biggest critiques of mentoring programs is the lack of training provided to mentors (Ehrich, Hansford, & Tennent, 2004). The mentors were required to keep daily logs of their mentoring activities. UNIV 100 instructors also gave feedback on the mentors' performance. Mentors were paid an hourly wage and generally worked 5 to 6 hours a week for the program.

Each cohort consisted of 20 to 25 students, divided equally between two mentors. Some cohorts received only one mentor (if the mentor had a great deal of experience). The peer-mentored sections of UNIV 100 were structured such that mentors actively modeled effective in-class behaviors for their mentees. For instance, the mentors were expected to show up on time to class, sit up straight in their chair, take initiative in asking questions of the instructor, and keep their cell phones out of sight. The mentors were trained to spot warning signs that a student was not doing well (e.g., consistently showing up late to class or not participating in class activities). If deemed necessary, the mentor would intervene and help the student get back on track.

In addition to participating in class, the mentors engaged their mentees in three specific activities throughout the semester. The first was a one-on-one meeting between the mentor and each mentee. The meeting lasted about 30 minutes, and the mentor took the opportunity to get acquainted with each of the mentees (e.g., learn about their background, hobbies, interests, and career goals). The second activity had the mentors work with each mentee to become familiar with one academic resource on campus that the mentee wished to utilize (e.g., library, counseling services, and academic advisement). The mentor then helped familiarize the mentee with the selected resource. For the third activity, the mentor arranged for a group of three to four mentees to attend an event on campus that was not part of the mentor program. For instance, the group could attend a campus sporting event, a free musical concert on campus, or take a tour of the campus art gallery.

Research Questions

The following research questions were developed: (a) Do mentored students, compared with students with no peer mentor, differ significantly in perceptions of integration and support at the end their first semester of college (posttest) after controlling for beginning of semester perceptions (pretest)? (b) Do mentored students' perceptions of integration and support at college significantly increase from the beginning to the end of the semester? (c) Were mentored students satisfied with the peer-mentor program and the peer mentors?

(d) What did the mentored students find beneficial about the program? (e) In what ways did the mentored students think the program could be improved?

The current evaluation study is an attempt to remedy some of the methodological issues noted by (a) Crisp and Cruz (2009) in a review of college mentoring studies from 1990 to 2007 and (b) Gershenfeld (2014) in a review of college mentoring studies from 2008 to 2012. These reviews noted that most studies were nonexperimental, had no comparison group, were cross sectional, relied upon descriptive methods as the main analyses, and were limited to a specific institutional sample (e.g., department and college) that was not generalizable to the study population. The current study (a) used a quasi-experimental design with a comparison group, (b) collected and analyzed pretest and posttest data to compare the groups, and (c) used data from an introductory university course with participants whose demographics were generalizable to the larger university population.

Methods

Procedures

The study used a pretest–posttest, comparison group design (i.e., quasi-experimental). Pretest and posttest data were collected using self-report surveys that included basic demographic information, forced response choice questions, and open-ended response questions. The university's Committee for the Protection of Human Subjects approved the study.

The experimental group included students in 19 UNIV 100 classes where students received peer mentors as part of the program. The comparison group included the remaining UNIV 100 students who did not receive peer mentors. A few sections of UNIV 100 were excluded from the comparison groups to make the treatment and comparison groups more similar. Specifically, the honors sections and the section for deaf and hard of hearing were excluded.

Surveys were taken online using Qualtrics.com software. A link to the pretest survey was emailed to students in the first week of the fall semester, and a link to the posttest was emailed at the last week of the semester. Four reminder emails were sent to increase participation. Also, to increase participation, 15 respondents at pretest and 15 at posttest were randomly selected from the email addresses associated with complete surveys to receive $15 gift cards to a nationwide discount store. Email addresses were taken from class lists and uploaded into Qualtrics' secure server. Using a security feature of Qualtrics, a unique identification code was assigned to each email address and then the identification code was used to match the pretest and posttest surveys to ensure anonymity.

Sample Characteristics

Out of 1,071 students contacted to take the survey, 460 completed the pretest, and 364 completed the posttest. After matching participants with both complete pretest and posttest surveys, 304 students were included in the final sample (162 with a peer mentor and 142 without a peer mentor). Demographics for the sample, including age, ethnicity, college major, birth country, generation status, parents' college degree attainment, and parents' birth country, were collected (see Table 1).

Table 1. Summary of Participant Demographics for Mentored Students, Nonmentored Students, and Total Sample.

	Mentored ($n = 162$)		Nonmentored ($n = 142$)		Total sample ($n = 304$)	
	n	%	*n*	%	*n*	%
Age	$M = 18.1$		$M = 18.1$		$M = 18.1$	
Gender						
Men	55	34.0	39	27.5	94	30.9
Women	107	66.0	103	72.5	210	69.1
Ethnicity						
African American or Black	7	4.3	13	9.2	20	6.6
Asian American or Pacific Islander	20	12.3	15	10.6	35	11.5
Caucasian or White	7	4.3	22	15.5	29	9.5
Hispanic or Latino	114	70.4	80	56.3	194	63.8
Middle Eastern or Armenian	11	6.8	11	7.7	22	7.2
Mixed or Other	3	1.9	1	.7	4	1.3
Parents' college education						
At least one parent has a college degree	43	26.5	50	35.2	93	30.6
Neither parent has a college degree	119	73.5	92	64.8	211	69.4
Major						
Biology	23	14.7	10	7.1	33	11.1
Kinesiology	8	5.1	9	6.4	17	5.7
Psychology	2	1.2	14	9.9	16	5.4
Undecided	83	53.2	57	40.4	140	47.1

(continued)

Table 1. Continued

	Mentored ($n = 162$)		Nonmentored ($n = 142$)		Total sample ($n = 304$)	
	n	%	*n*	%	*n*	%
Birth country						
El Salvador	3	1.9	1	0.7	4	1.4
Mexico	8	4.9	5	3.5	13	4.4
Other	14	8.8	14	10.3	28	9.4
Philippines	2	1.3	4	2.9	6	2.0
USA	132	81.5	112	78.9	244	82.7
Mother's birth country						
El Salvador	21	13.5	10	7.4	31	10.7
Guatemala	8	5.1	12	8.9	20	6.9
Mexico	56	35.9	46	34.1	102	35.1
Other	30	19.2	20	14.8	50	17.1
Philippines	7	4.5	7	5.2	14	4.8
USA	34	21.8	40	29.6	74	25.4
Father's birth country						
El Salvador	19	11.7	11	8.3	30	10.5
Guatemala	6	3.9	12	9.0	18	6.3
Mexico	68	44.2	49	36.8	117	40.8
Other	19	12.3	11	8.2	51	17.7
Philippines	7	4.5	6	4.2	13	4.5
USA	25	16.2	33	24.8	58	20.2
Generation status						
First generation	94	71.2	72	62.1	166	66.9
Second generation	38	28.8	44	37.9	82	33.1

Measures

A self-report survey was administered online as the pretest and posttest. Demographic information was collected, including age, ethnicity, intended major, and parents' birth countries. Five items measured participants' initial impressions regarding integration and support at school during the first 2 weeks of their freshmen year and at the end of the semester (i.e., posttest). The items follow:

1. "I feel very integrated into the campus community."

2. "I feel an active part of the campus community."
3. "I feel a strong positive connection to the university."
4. "I have at least one person who I can turn to for emotional support at the university."
5. "I have at least one person who I can turn to for academic support at school."

Response choices were as follows: 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *somewhat agree*, 5 = *agree*, and 6 = *strongly agree*.

At posttest, participants who were assigned a peer mentor were asked to rate their agreement with nine statements about their peer mentor (see Table 4), such as "Provided helpful resources," "Was supportive," and "Informed me about university events (e.g., plays, sport events, and carnivals)." Response choices follow: 1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*.

Next, the student mentees were asked to rate their peer mentor on eight attributes (see Table 5), such as "Had a positive attitude," Cared about my academic success," and "Overall rating of the peer mentor." Response choices ranged from 1 to 5, with 1 = *very low*, 2 = *low*, 3 = *average*, 4 = *high*, and 5 = *very high*.

Next, student mentees were asked, in open-ended format, "What did you find was beneficial about the peer mentors?" and "How could the peer mentors be improved for next year?"

Results

All statistical analyses were run using SPSS 18.0 for Windows. A p value of .05 was used as a cutoff for all statistical tests of significance. To answer Research Question 1, a between-subjects analysis of covariance was run to assess differences between students with and without a peer mentor on integration and support at college. Specifically, pretest responses were covariates, and posttest responses were the outcome variables. Although a multivariate analysis of covariance could have been used, Huberty and Morris (1989) contend that multiple univariate analyses are more useful when the question of interest is on specific items.

At posttest, students with peer mentors (when compared with the nonmentored students) reported significantly more integration into the university, felt significantly more active at school, and felt a significantly stronger positive connection to the university (see Table 2), even after controlling for pretest scores. In addition, the mentored students were significantly more likely than nonmentored students to report they had at least one person they could turn to for emotional support and academic support, compared with nonmentored students.

For Research Question 2, paired samples t tests were conducted to assess differences between mentored students' pretest and posttest reports of

Table 2. Summary of ANCOVAs Run on Mentored Students' Versus Nonmentored Students' Posttest Perceptions of College, Controlling for Pretest Scores ($n = 304$).

	Mentored		Nonmentored					
	M	*SE*	*M*	*SE*	*F*	*df*	*p* value	*eta*
I feel very integrated into the university community.	4.73	.09	4.43	.09	6.05	1,297	.014	.02
I feel an active part of the university community.	4.50	.09	4.09	.09	9.31	1,297	.002	.03
I feel a strong positive connection to university.	4.90	.08	4.56	.09	7.40	1,292	.007	.03
I have at least one person who can turn to for emotional support at the university.	5.09	.09	4.77	.10	5.58	1,297	.019	.02
I have at least one person who I can turn to for academic support at the university.	5.20	.09	4.85	.09	7.24	1,292	.008	.02
I expect to graduate from the university in 4 to 6 years.	5.52	.07	5.49	.08	.05	1,295	.825	.00

Note. ANCOVA = analysis of covariance. 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *somewhat agree*, 5 = *agree*, 6 = *strongly agree*.

integration and support at college (see Table 3). From pretest to posttest, students reported significantly more integration into the university, felt significantly more active at the university, felt a significantly stronger positive connection to the university, and agreed significantly more that they had at least one person they could turn to for emotional support and academic support.

For Research Question 3, frequencies were run on students' level of agreement with nine statements about their peer mentors (e.g., provided helpful resources, helped them make a better grade, and was available outside of class). As shown in Table 4, the vast majority of the students agreed or strongly agreed (ranging from 81.6% to 98.7%) with the positively worded statements about their peer mentors. Also, frequencies were run on the students' ratings regarding seven qualities of their peer mentors (e.g., positive attitude, respectful, cared about their academic success, approachable, and responsiveness). As shown in Table 5, the majority of the students surveyed (ranging from 86.1% to 96.2% for each item) rated their peer mentor as being "high" or "very high" on each characteristic while very few rated their mentor as "low" or "very low" (ranging from .6% to 3.1%). When asked to evaluate their peer mentors overall, 95% of the students gave their mentor a "high" or "very high" rating.

Table 3. Summary of Paired Samples *t* Tests Comparing Mentored Students' Pretest With Posttest Scores on Perceptions of Their First Semester of College ($n = 162$).

	Pre	Post	*p* value	*t* value	Cohen's *d*
I feel very integrated to the university community.	4.08	4.72	.000	−5.03	−.56
I feel an active part of the university community.	3.90	4.46	.000	−4.69	−.47
I feel a strong positive connection to the university.	4.48	4.87	.001	−3.35	−.35
I have at least one person who I can turn to for emotional support at the university.	4.66	5.06	.001	−3.41	−.33
I have at least one person who I can turn to for academic support at the university.	4.90	5.19	.015	−2.46	−.26

Note. 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *somewhat agree*, 5 = *agree*, 6 = *strongly agree*.

Table 4. Frequencies for Ratings of Mentors ($n = 162$).

Please rate the peer mentor	Strongly disagree	Disagree	Agree	Strongly agree
Provided helpful resources	1.3%	1.9%	37.3%	59.5%
Helped me learn the course material	2.5%	10.1%	42.4%	44.9%
Helped me make a better grade	2.5%	11.5%	40.8%	45.2%
Was available outside of the class through email, phone, in person, etc.	1.3%	1.9%	33.1%	63.7%
Was supportive	.6%	.6%	36.3%	62.4%
Made me feel that people at the university care whether I graduate or not	.6%	4.4%	35.4%	59.5%
Helped me understand the requirements of my major	2.5%	15.8%	33.5%	48.1%
Informed me about university events (e.g., plays, sport events, and carnivals)	2.5%	8.9%	36.3%	52.2%
Made me feel more connected to the university	1.3%	8.2%	36.7%	53.8%

Note. 1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, 4 = *strongly agree*.

Table 5. Frequencies for Ratings of Mentors Part 2 ($n = 162$).

Please rate the peer mentor	Very low	Low	Average	High	Very high
Had a positive attitude	–	.6%	5.1%	22.2%	72.2%
Was respectful	–	–	3.8%	20.9%	75.3%
Cared about my academic success	.6%	2.5%	10.8%	15.8%	70.3%
Involved the students	.6%	1.9%	7.6%	21.5%	68.4%
Was approachable	–	.6%	4.5%	21.8%	73.1%
Answered questions	–	1.3%	7.0%	17.7%	74.1%
Was responsive	–	.6%	5.7%	19.0%	74.7%
Overall rating of the peer mentor	–	1.3%	3.8%	18.4%	76.6%

Note. 1 = *very low*, 2 = *low*, 3 = *average*, 4 = *high*, 5 = *very high*.

For Research Questions 4 and 5, students' open-ended responses about perceived benefits and suggested improvements for the peer-mentor program were coded. The *evaluation coding* (see Saldaña, 2013) of the data used a multistep process. In the initial step, one of the principal investigators read through the responses to each question on all the surveys and engaged in *descriptive coding* to identify recurring topics mentioned for each question (Saldaña, 2013). In the next step, *focused coding* was used to collapse similar topics together into the most salient broader themes mentioned by participants (Saldaña, 2013). The principal investigators identified 12 broad themes for perceived benefits and 11 themes for suggested improvements. Next, one principal investigator recoded each response using the broader themes identified in the focused coding. Specifically, each response by a participant was coded based on whether it corresponded to one or several of the themes that were identified. For example, one student mentee stated the following as a perceived benefit: "The peer mentors gave us that extra push to break from that freshman shyness, along with familiarizing us with the campus." This response would have two themes matched to it: "Transitioning from high school to college/adjusting to college" and "Learning the university campus and where different buildings are located." If a student mentee answered that he or she did not find the mentor beneficial, this was matched to a theme as well (i.e., "Not helpful"). Similarly, if a student answered that he or she did not think the program needed any improvement, this was assigned to the theme, "Nothing/Good as is." After every response was coded, then the focused coding was double-checked by trained research assistants. Another principal investigator resolved any discrepancies (<.15%) between the initial coding and the research assistant doing the verification. Finally, the percent of respondents who mentioned each topic was calculated. If a participant did not answer the question (i.e., a blank response), that participant was excluded from the percentage calculation for that question.

In addition, quotes from students who mentioned the themes were identified. The usefulness of quantifying the number or percent of participants who mention a particular theme is discussed by Saldaña (2013) and MacQueen, McLellan-Lemal, Bartholow, and Milstein (2008).

As shown in Table 6, the most commonly mentioned benefit by 26.3% of the mentees was that the peer mentors provided general assistance and were very helpful. For example, one female, Mexican American mentee stated, "Having a peer mentor was very beneficial because I knew exactly who to go when I needed assistance or someone to answer any of my questions." The second most mentioned theme (i.e., 25.1%) was that the peer mentors were friendly, approachable, and available. For example, another female Mexican American mentee said, "They were very helpful and friendly. They helped me throughout everything, and I wasn't scared to approach them." Similarly, a female Latina mentee stated, "He was approachable, and he knew almost everyone in my major." The next most frequent theme (i.e., 21.6%) was that the peer mentors gave emotional support, encouragement, and help with personal issues. A male mixed ethnicity mentee stated, "You could talk about anything with them. Mine was like an academic AND emotional counselor." Similarly, a female Black mentee stated, "That you can talk to them about anything and they are very helpful if you have problems." The next most mentioned theme by 13.5% of the mentees was that the mentors were relatable and developed good relationships with them. For example, a male Middle Eastern American student stated,

> The peer connection that was made was not only evident but truly useful. I was able to build a relationship with my assigned mentor and now I trust her judgment 100% and know I'll have her assistance even after the class is over.

Seven additional themes were mentioned (see Table 6): (a) advice about major, (b) campus resources, (c) transitioning to college, (d) campus opportunities, (e) help with schoolwork, (f) knowing the campus, and (g) time management or study habits. A few other comments by mentees follow. A male Asian mentee stated, "Helped by having someone in the class that knew what was going on around campus instead of having to ask 20 different people," while a female Guatemalan American mentee stated, "The peer mentors gave us that extra push to break from that freshman shyness, along with familiarizing ourselves with the campus." And finally, A female Latina mentioned a few of the themes by stating, "I found that they were very nice and always avaliable [*sic*] to help. They were both great help in advice tips and also they were someone you can turn to when you are stressing." It should be noted that 4.1% of the respondents stated the peer mentors were not helpful or there were no perceived benefits of the peer-mentor program.

Next, the mentees were asked about suggested improvements for the mentoring program and the mentees (see Table 6). The theme that appeared most often

Table 6. Percent of Participants Who Mentioned Each Perceived Benefit and Suggested Improvement.

Benefits ($n = 171$)	%	Improvements ($n = 157$)	%
General assistance or helpfulness or answer questions	26.3	Nothing, good as is	35.0
Friendly, approachable, or available	25.1	More involvement and contact in and out of class	19.7
Emotional support, encouragement, or help with personal issues	21.6	More events, assignments, or activities	8.9
Relatable (e.g., mentors are students themselves) or build relationships	13.5	More informative and knowledgeable or better advice	7.0
Advice about major, future classes, or professors	8.2	More mentors overall	7.0
Information about campus services or resources	8.2	More focus on academics or help with classwork	5.1
Transitioning and adjusting to college	7.6	More one-on-one meetings with students	5.1
Campus involvement, opportunities, or networking	5.8	Don't know or not sure or not applicable	5.1
Not helpful	4.1	More sociable or approachable	4.5
Help with studying and homework	3.5	Unnecessary or make it optional or fewer meetings	3.2
Learning the university campus (e.g., locating buildings)	2.9	Get students more involved (e.g., take students to campus events)	2.5
Time management or study habits	2.9		

(i.e., 35.0% of participants) for suggested improvements was that the mentor program was good as is and does not need improvement. The next most frequently occurring suggestion (i.e., 19.7%) was that the mentors could be more involved, be in class more often, and establish more contact outside of class. Other suggestions relating to increasing the mentoring services included (a) having more mentoring events or activities, (b) having more mentors, (c) more one-on-one meetings, and (d) takings students to more campus events. Some specific suggestions regarding the mentors (by less than 5.1% of the mentees) included (a) be more informative (e.g., "know more about each major"), (b) have more focus on academics (e.g., "studying with the students"), and (c) be more sociable or approachable. Finally, a small percentage

(i.e., 3.2%) felt the mentoring program should be optional or was unnecessary, while 5.1% were not sure or did not know any suggestions.

Discussion

The purpose of this study was to evaluate whether a peer-mentoring program had an impact on freshmen college students' first-semester experiences. The results indicated mentored students, compared with nonmentored students, reported a significantly greater increase in integration and connection to the university from pretest to posttest compared with nonmentored students. And, mentored students showed a significant increase from pretest to posttest on university integration and connection. Both quantitative and qualitative data showed that mentored students viewed the peer mentors very favorably and that mentored students reported numerous benefits of the program. Also, the mentored students made some suggestions for how to improve the program.

As mentioned previously, the students with mentors felt significantly more connected to the university, perceived significantly more support at the university, and felt significantly more like an active part of the university than students without a mentor. According to Tinto's social integration theory (Tinto, 1975, 1993), students with peer mentors should be more likely to persist and graduate because they reported feeling more integrated to the university than nonmentored students. The results of this study are consistent with prior research showing that peer mentorship is beneficial to students' feelings of integration (Chapman & Pascarella, 1983; Hughes & Fahy, 2009; Tinto, 1997), academic success (Leidenfrost et al., 2011; Rodger & Tremblay, 2003; Salinitri, 2005), and level of social support (Grant-Vallone & Ensher, 2000; Mallinckrodt, 1988). This is likely because the students with mentors benefitted from the individualized attention and had more opportunities to be involved on campus. It is also possible that the cohorted sections with students of similar major may have contributed to the increased feelings of connection and integration.

Qualitative data in the form of open-ended questions about what students found beneficial about the program, as well as suggestions for improvement, supported the hypotheses as well. The most commonly cited benefits of the peer mentors were that they provided general advice, as well as some form of emotional support, encouragement, motivation, or help with personal issues. The mentees also frequently described their mentors as being friendly and approachable as well as relatable because the mentors were also students at the university. In addition to the qualitative responses, the ratings of the peer mentors showed that most students rated the interpersonal qualities of the peer mentor highly, felt the mentors helped integrate them into the university, and provided academic, career, and emotional support. These positive attributes are consistent with how peer mentoring has been characterized in the literature

(Crisp & Cruz, 2009; Grant-Vallone & Ensher, 2000; Leidenfrost et al., 2011; Nora & Crisp, 2007; Zalaquett & Lopez, 2006). It appears that the peer mentors are a form of social capital in the university setting that can help students succeed.

In regard to suggestions for improvements, most mentees stated that the peer-mentor program did not need to be improved and is fine as it is. However, a frequently cited suggestion was that mentors be more involved overall, including more contact outside of class or attending class more often. Mentees also suggested more assignments, activities, and events specific to the peer-mentorship program. Thus, the students appeared to want more involvement with the mentors, which suggested the perceived value of the peer mentors. Future iterations of the program might want to increase the number of mentors as a way to increase the frequency of contact with students in the UNIV 100 classes.

Other suggestions for improvement were that mentors could be more knowledgeable, informative, or give better advice. Increasing collaborations between the mentors and faculty in the majors or having peer mentors get training from advisors in the department might increase their knowledge and ability to give academic- or career-related advice to the mentees.

Limitations and Research Implications

Although this study contributes to the literature on potential benefits of university peer mentoring, there are some limitations to the study that should be acknowledged. For all students contacted to take the survey, the response rate was less than half at pretest and a third at posttest. This could be due to several reasons. First, the surveys were distributed online to students' campus email accounts. Students might have been less inclined to participate online when taking the survey from home or they could have started the survey and forgot to finish. These issues could have been minimized with a paper-and-pencil survey given during class time. Also, participation in the evaluation research was voluntary. The instructors, as well as the peer mentors, encouraged but could not require their students to take the surveys.

Next, the surveys were collected over the course of one semester, meaning that data related to retention and graduation rates could not be recorded yet. However, the evaluator and project director for the grant are tracking this data across a 5-year period. The institutional data will add to the understanding of the perceived impact of the peer-mentoring program.

Another limitation is that the sample was from one university in Southern California, which restricts generalizability of the results. However, the grant is targeting this university, and the results are mostly consistent with studies at other universities in other geographic regions. Regardless, replicating this program and evaluation in other settings is recommended.

Implications for Practice

Despite the limitations, certain implications for practice emerge. First, the findings of this evaluation can be used to inform the administrators of the program of the relative merits of the peer-mentoring program. Given that the program is federally funded, they can convey the results of the program to stakeholders using valid and accurate data.

Also, the UNIV 100 instructors and the peer mentors can use the study to identify aspects of the program that are successful, as well as to target areas that need improvement. For instance, although many of the mentees felt that they benefitted from their mentors' support and encouragement, one frequent suggestion was that the mentors could also have been more involved or could have attended class more often. Thus, program coordinators might want to monitor and encourage mentors to ensure that they are available and make more frequent contact with the mentees. Similarly, more mentors might allow more frequent contact.

Finally, the results can help in developing similar programs (Nan, 2003). This is especially true when designing other university peer-mentoring programs that target low college retention and graduation rates. The program workers can reference the success of this and similar programs in helping students feel more connected to the university, which in turn should predict a lower likelihood of dropping out of school (Tinto, 1997). In the current program, mentees cited that the peer mentors were able to answer questions as well as give advice about the major, classes, and professors. This is likely due to the peer mentors mostly coming from the same majors as the mentees. Other peer-mentor programs may want to consider the potential advantage of assigning peer mentors from the same discipline as the mentees.

Conclusion

This study was an evaluation of a university peer-mentoring program at a comprehensive university in Southern California, which aimed to increase retention and graduation rates at the university. The effectiveness of the program was measured through students' feelings of belonging, connectedness, perceived academic and social support, and familiarity with campus resources and facilities. Compared with students without a peer mentor, students who were assigned a peer mentor reported feeling significantly more integrated into the campus and more connected. Mentored students' feelings of connectedness and integration increased significantly from the beginning of the semester to the end of the semester. Results paralleled other studies that found peer mentoring to be beneficial in promoting feelings of integration and perceived supportiveness, which might consequently help students to persist beyond their freshmen year and graduate on time.

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References

ACT Incorporated. (2010). *What works in student retention? Report for all colleges and universities. Fourth national survey*. Iowa City, IA Author. Retrieved from http://www.act.org/research/policymakers/pdf/droptables/AllInstitutions.pdf

Allen, T. D., Mcmanus, S. E., & Russell, J. E. A. (1999). Newcomer socialization and stress: Formal peer relationships as a source of support. *Journal of Vocational Behavior*, *54*, 453–470. doi:10.1006/jvbe.1998.1674

Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco, CA: Jossey-Bass.

Baum, S., Ma, J., & Payea, K. (2013). *Education pays: The benefits of higher education for individuals and society*. *College board - Trends in higher education series*. Washington, DC College Board. Retrieved from http://trends.collegeboard.org/sites/default/files/education-pays-2013-full-report.pdf

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, *12*, 155–187. doi:10.1007/BF00976194

Beltman, S., & Schaeben, M. (2012). Institution-wide peer mentoring: Benefits for mentors. *The International Journal of the First Year in Higher Education*, *3*(2), 33–44. doi:10.5204/intjfyhe.v3i2.124

Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of integration in a causal model of student persistence. *Research in Higher Education*, *40*(6), 641–664. doi:10.1023/A:1018708813711

Bozeman, B., & Feeney, M. K. (2007). Toward a useful theory of mentoring - A conceptual analysis and critique. *Administration and Society*, *39*(6), 719–739. doi:10.1177/0095399707304119

Bradburn, E., & Carroll, C. D. (2002). Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996–1998. *Education Statistics Quarterly*, *4*, 42–47.

Chapman, D. W., & Pascarella, E. T. (1983). Validation of a theoretical model of college withdrawal: Interaction effects in a multi-institutional sample. *Research in Higher Education*, *19*(1), 25–48. doi:10.1007/BF00977337

Chester, A., Burton, L. J., Xenos, S., & Elgar, K. (2006). Peer mentoring: Supporting successful transition for first year undergraduate psychology students. *Australian Journal of Psychology*, *65*, 30–37. doi:10.1111/ajpy.12006

Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education*, *50*(6), 525–545. doi:10.1007/s11162-009-9130-2

Ehrich, L. S., Hansford, B., & Tennent, L. (2004). Formal mentoring programmes in education and other professions: A review of the literature. *Educational Administration Quarterly*, *40*, 518–540. doi:10.1177/0013161x04267118

Gershenfeld, S. (2014). A review of undergraduate mentoring programs. *Review of Educational Research*, *84*(3), 365–391. doi:10.3102/0034654313520512

Glaser, N., Hall, R., & Halperin, S. (2006). Students supporting students: The effects of peer mentoring on the experiences of first year university students. *Journal of the Australia and New Zealand Student Services Association*, *27*, 4–17.

Goff, L. (2011). Evaluating the outcomes of a peer-mentoring program for students transitioning to postsecondary education. *The Canadian Journal for the Scholarship of Teaching and Learning*, *2*(2), 1–13. doi:10.5206/cjsotl-rcacea.2011.2.2

Grant-Vallone, E. J., & Ensher, E. A. (2000). Effects of peer mentoring on types of mentor support, program satisfaction and graduate student stress: A dyadic perspective. *Journal of College Student Development*, *41*(6), 637–642.

Hausmann, L. R. M., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, *48*, 803–839. doi:10.1007/s11162-007-9052-9

Hu, S., & Ma, Y. (2010). Mentoring and student persistence in college: A study of the Washington state achievers program. *Innovative Higher Education*, *35*(2), 329–341. doi:10.1007/s10755-010-9147-7

Huberty, C. J., & Morris, J. D. (1989). Multivariate analysis versus multiple univariate analyses. *Psychological Bulletin*, *105*(2), 302–308. doi:10.1037/0033-2909.105.2.302

Hughes, A., & Fahy, B. (2009). Implementing an undergraduate psychology mentoring program. *North American Journal of Psychology*, *11*(3), 463–470. doi:10.1111/ajpy.12006

Institute for Higher Education Policy. (1998). *Reaping the benefits: Defining the public and private value of going to college. The new millennium project on higher education costs, pricing, and productivity*. Washington, DC: Author.

Karcher, M. J., Kuperminc, G. P., Portwood, S. G., Sipe, C. L., & Taylor, A. S. (2006). Mentoring programs: A framework to inform program development, research, and evaluation. *Journal of Community Psychology*, *34*(6), 709–725. doi:10.1002/jcop.20125

Kram, K. (1983). Phases of the mentor relationship. *Academy of Management Journal*, *26*, 608–625. doi:10.2307/255910

Leidenfrost, B., Strassnig, B., Schabmann, A., Spiel, C., & Carbon, C. (2011). Peer mentoring styles and their contribution to academic success among mentees: A person oriented study in higher education. *Mentoring and Tutoring: Partners in Learning*, *19*(3), 347–364. doi:10.1080/13611267.2011.597122

Lotkowski, V., Robbins, S. B., & Noeth, R. J. (2004). *The role of academic and non-academic factors in improving college retention: ACT policy report*. Iowa City, IA: ACT Policy Report. Retrieved from http://www.act.org/research/policymakers/pdf/college_retention.pdf

MacQueen, K. M., McLellan-Lemal, E., Bartholow, K., & Milstein, B. (2008). Team-based codebook development: Structure, process, and agreement. In G. Guest & K. M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 119–135). Lanham, MD: AltaMira Press.

Mallinckrodt, B. (1988). Student retention, social support, and dropout intention: Comparison of Black and White students. *Journal of College Student Development*, *29*(1), 60–64.

Mcgaha, V., & Fitzpatrick, J. (2005). Personal and social contributors to dropout risk for undergraduate students. *College Student Journal*, *39*(2), 287–297.

McGrath, M., & Braunstein, A. (1997). The prediction of freshmen attrition: An examination of the importance of certain demographic, academic, financial, and social factors. *College Student Journal*, *31*, 396–408.

Mohr, J., Eiche, K., & Sedlacek, W. (1998). So close, yet so far: Predictors of attrition in college seniors. *Journal of College Student Development*, *39*(4), 343–354.

Murtaugh, P. A., Burns, L. D., & Shuster, J. (1999). Predicting the retention of university students. *Research in Higher Education*, *40*(3), 355–371. doi:10.1023/A:1018755201899

Nan, S. A. (2003). Formative evaluation. In G. Burgess & H. Burgess (Eds.), *Beyond intractability*. Boulder, CO: University of Colorado/Conflict Research Consortium. Retrieved from http://www.beyondintractability.org/bi-essay/formative_evaluation

Nora, A., & Crisp, G. (2007). Mentoring students: Conceptualizing and validating the multi-dimensions of a support system. *Journal of College Student Retention: Research, Theory and Practice*, *9*(3), 337–356. doi:10.2190/CS.9.3.e

Pascarella, E. T., & Terenzini, P. T. (1983). Predicting voluntary freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. *Journal of Educational Psychology*, *75*(2), 215–226. doi:10.1037/0022-0663.75.2.215

Pascarelli, J. (1998). A four-stage mentoring model that works. In S. Goodlad (Ed.), *Mentoring and tutoring by students* (pp. 231–243). London, England: Kogan Page & BP.

Rodger, S., & Tremblay, P. F. (2003). The effects of a peer mentoring program on academic success among first year university students. *The Canadian Journal of Higher Education*, *33*(3), 1–18.

Saldaña, J. (2013). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Salinitri, G. (2005). The effects of formal mentoring on the retention rates for first-year, low achieving students. *Canadian Journal of Education*, *28*(4), 853–873. doi:10.2307/4126458

Sanchez, R. J., Bauer, T. N., & Paronto, M. E. (2006). Peer-mentoring freshmen: Implications for satisfaction, commitment, and retention to graduation. *Academy of Management Learning and Education*, *5*(1), 25–37. doi:10.5465/AMLE.2006.20388382

Terrion, J. L., & Leonard, D. (2007). A taxonomy of the characteristics of student peer mentors in higher education: Findings from a literature review. *Mentoring and Tutoring*, *15*(2), 149–164. doi:10.1080/13611260601086311

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*, 89–125. doi:10.3102/00346543045001089

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd.). Chicago, IL: University of Chicago Press.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of Higher Education*, *68*, 599–623. doi:10.2307/2959965

United States Department of Labor - Bureau of Labor Statistics. (2011, December 2). *Economic news release: Table A-4. Employment status of the civilian population 25*

years and over by educational attainment. Retrieved from http://www.bls.gov/news.release/empsit.t04.htm

Ward, E. G., Thomas, E. E., & Disch, W. B. (2010). Goal attainment, retention and peer mentoring. *Academic Exchange Quarterly*, *14*(2), 170–176.

Zalaquett, C. P., & Lopez, A. D. (2006). Learning from the stories of successful undergraduate Latina/Latino students: The importance of mentoring. *Mentoring & Tutoring: Partnership in Learning*, *14*(3), 337–353. doi:10.1080/13611260600635563.

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