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The Impact of Out of Classroom Experiences on College Student Development*

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Current public debates about college, perhaps best illustrated by the Spellings Commission on the Future of Higher Education (U.S. Department of Education, 2006), suggest that classroom experiences and curriculum are the only influences on college outcomes. Yet research shows what campus faculty and practitioners already know – what happens outside of the classroom on college campuses positively affects student learning and development in a variety of ways (Astin, 1993; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Pascarella & Terenzini, 2005; Terenzini, Pascarella, & Blimling, 1996). In a recent speech, Braskamp (2007) suggested three questions to guide college experiences: How do I know? Who am I? and How do I relate to others? These questions reveal three outcomes often associated with college attendance: cognitive development, identity development, and interpersonal development. In this paper, I discuss college outcomes and their relationship to out of classroom experiences. Then I present the methods used in this study of the impact of out of classroom experiences on college student development. I conclude with the results of the study and implications for practice and future research.

Outcomes

In their review of the literature, Pascarella and Terenzini (2005) summarized the effects of going to college, as such: "...people who go to college, compared with those who do not, learn better, know more, earn more. College adds value to their lives, enhances their self-esteem, and increases their understanding of others and their engagement in their communities" (p. 628). They identified 37 outcomes associated with going to college, which they categorized as academic and cognitive, psychosocial, attitudes and values, career and economic, and quality of life. The taxonomy of college outcomes developed by Pascarella and Terenzini is similar to one

developed earlier by Astin (1993) and overlaps with the list that Kuh (1993) generated from his inductive analysis of transcripts with college seniors.

In Astin's (2003) more recent reflection on the college outcomes researchers study, he suggests several personal and interpersonal qualities that are important outcomes in contemporary society:

Over the years, people have periodically wondered why we cover such a wide range of student outcomes. The simplest way to answer such a question is to ask, What personal qualities should we be trying to cultivate in our students? ... When you look at the problems of our society, it also becomes clear that future generations of professionals and leaders are going to need a variety of talents, skills, and abilities to cope with the challenges of the new millennium. While I certainly don't oppose our continuing efforts to promote traditional outcomes such as general knowledge, knowledge of a field of discipline, career preparation, and the like, it seems to me that the challenges of our modern global society will require that higher education be able to devote much more attention to the cultivation of other personal qualities such as citizenship, social responsibility, leadership, global understanding, self-understanding, and the like (p. 27).

One way to organize the many college outcomes delineated by Astin (1993, 2003), Kuh (1993), and Pascarella and Terenzini (1991, 1995) is to classify them as cognitive and psychosocial. Cognitive outcomes include the many academic and epistemological outcomes traditionally associated with college. Psychosocial outcomes include intrapersonal and interpersonal development, which also have an association with college attendance. Braskamp's (2007) three questions -- How do I know? Who am I? and How do I relate to others? -- suggest an

understanding of college outcomes based on cognitive and psychosocial development. Many of these outcomes reported by students and associated with college impact are attributable, at least in part, to out of classroom experiences.

Cognitive development. Terenzini et. al. (1996) concluded that “academic and cognitive learning are positively shaped by a wide variety of out of classroom experiences” (p. 157). This has been demonstrated by studies linking out of classroom experiences with positive orientations toward learning (Terenzini, Springer, & Pascarella, 1993) and increased critical thinking skills (Pascarella et al., 1996; Terenzini, Springer, Pascarella, & Nora, 1995). Some of the out of classroom experiences related to positive learning orientations are campus residence, relationships with other students, and talking with professors outside of class (Terenzini et al., 1993). Pascarella et al. found that “out of classroom-experiences were somewhat more important to development of critical thinking than in-class experiences were” (p. 189). Experiences associated with gains in critical thinking include involvement in organizations and clubs, participation in racial and cultural awareness activities, and perceptions that faculty are concerned about student development (Pascarella et al.). Additional cognitive and knowledge-based outcomes associated with out of classroom experiences are: analytic skills (Lambert, Terenzini, & Lattuca, 2007); knowledge and skills aligned with institutional mission (Kuh, Schuh, Whitt & Associates, 1991); cognitive complexity and academic skills (Kuh, 1995); intellectual development, problem solving, and scientific reasoning (Bradley & Graham, 2000); and understanding science/technology and thinking and writing skills (Flowers, 2004).

Psychosocial development. Development on an extensive array of psychosocial characteristics is associated with out of classroom experiences. For example, in their qualitative study of 14 institutions identified as exceptional at providing out of classroom experiences for

students, Kuh et. al. (1991) determined that the following outcomes were associated with out of classroom experiences: attitudes, skills, and values, associated with understanding oneself, others, and relation to others; ability to handle one's personal affairs and be economically self-sufficient; and qualities associated with satisfaction, physical and psychological well-being, and a balanced life. In a subsequent study, Kuh (1995) found a relationship between out of classroom experiences and interpersonal competence, practical competence, and humanitarianism. In a study that looked at learning for self understanding -- a scale that measures one's interest in clarifying his or her self-concept and values -- students' out of classroom experiences uniquely explained 10-18% of the total variance beyond that attributable to precollege characteristics during college (Springer, Terenzini, Pascarella, & Nora, 1995). The ability to work successfully in a group (Lambert et al., 2007) and other career development skills (Bradley & Graham, 2000; Flowers, 2004) have also been positively linked with out of classroom experiences.

Out of Classroom Experiences

College students' out of classroom experiences, broadly defined as any activity or experience the student has beyond the classroom, have been the subject of research studies for at least the past two decades (Astin, 1993; Pascarella & Terenzini, 1991, 2005). Students spend the majority of their time out of the classroom (Kuh, Schuh, Whitt, & Associates, 1991) and it is likely that students learn more in this setting (Seidman & Brown, 2006). It has been suggested that out of classroom experiences account for 70% of what students gain from college (Kuh, 1993). Out of classroom experiences are of particular interest to student affairs educators, whose realm of influence extends to most college experiences that are not classroom-related (Flowers, 2004; Kuh, 1996; Terenzini, Pascarella, & Blimling, 1996). The student affairs profession has

historically focused on the “whole student” and continues to do so today (ACPA, 1996; ACPA & NASPA, 2004; American Council on Education, 2004; NASPA., n.d.).

While no single out of classroom experience has been found to have a large effect on outcomes, it has been suggested that multiple experiences that are coordinated and mutually reinforcing may be the key to substantial impact (Terenzini, Pascarella, & Blimling, 1996). Moreover, the effects of out of class experiences contribute to cognitive and affective development in reciprocal and cumulative ways (Terenzini & Pascarella, 1994). Specific out of class experiences associated with desired college outcomes include: talking with faculty about assignments and career plans; talking with other students about campus issues, new ideas and views of people, or major social issues; making friends from different groups, including from different racial or ethnic backgrounds; and using information from classes or reading in conversations with others or applying such information to one’s job (Kuh, 1999).

Faculty interactions. Chickering and Gamson (1987) named student-faculty interaction as one of the good practices in undergraduate education that have been the foundation for practice and research in postsecondary education for more than twenty years. Astin (1993) found that student-faculty interactions were positively correlated with both personal and intellectual growth. Students’ out of classroom contacts with faculty have also been associated with gains in academic and cognitive development (Terenzini et al., 1996).

Peer interactions. Likewise, interactions with peers have been positively associated with a variety of developmental outcomes. The peer group is “the single most important environmental influence on student development” (Astin, 1993, p. xxii). Peer interactions are correlated with both interpersonal growth and academic development (Astin). Additionally, peer interactions concerning academics positively influence knowledge acquisition and academic skill

development (Pascarella & Terenzini, 2005).

Diversity experiences. In particular, research has focused on the positive effects of out of classroom diversity experiences. Hu and Kuh (2003) found that diverse interactions with students of different backgrounds and beliefs contribute to gains in diversity competence, general education, personal development, and intellectual development. In their study of effective educational practices, Kuh et al. (2005) described out of classroom diversity experiences as positive for some campuses. Research on racial diversity in the past few years has demonstrated that it “enhances the intellectual and personal impact of college” (Pascarella, 2006, p. 511).

Research Question

Clearly, out of classroom experiences contribute to many of the traditional cognitive and psychosocial developmental outcomes associated with attending college. Critical thinking & knowledge acquisition, understanding of self, and the ability to relate well with others have all been associated with out of classroom experiences. Yet the research demonstrating the benefits of these experiences has often had some methodological weaknesses (Astin, 1993; Pascarella; 2006) because it has been cross-sectional, lacked sufficient controls for students’ background characteristics and experiences, and did not include pre-test measures of the outcomes.

This study seeks to understand further the effect of out of classroom experiences on cognitive and psychosocial development while addressing methodological issues concerning college impact research. It includes variables representing personal characteristics and high school experiences as controls for confounding influences. It also includes pre-test measures of the outcomes, which has been identified as the best way to conduct college impact studies, given that experiential methods are not practical (Pascarella, 2006). The question guiding this inquiry

is, to what extent do college students' out of classroom experiences contribute to their cognitive, interpersonal, and identity development?

Research Methods

Sample and Data Collection

This research is part of a larger survey project of student experiences. The sample comes from a group of first-year and senior students who responded to a web survey about their college experiences at a large, 29,000-student, public research university located in the Midwest. The survey was sent to all undergraduate first-year and senior students in the spring of 2006 and took about 30-35 minutes to complete. In addition to an extensive series of questions about their college experiences, the survey also included questions about their high school experiences. The research team received completed surveys from approximately 36.5% of the students to whom the survey was sent. The respondents include 1,477 first-year students and 1,676 seniors, creating a total sample size of 3,153 students.

The data in the analysis is weighted to adjust for response bias. Women and individuals with high ACT scores responded to the survey in larger proportions than their counterparts, among both the first-year and senior respondents. The research team developed an algorithm to weight the respective first-year and senior student samples up to population values by sex and ACT composite score quartile. The weights make the first-year and senior samples more representative of the respective populations from which they were drawn.

Dependent Variables

The dependent variables for this study (see Table 1) consist of three composite scales measuring students' self-reported cognitive, interpersonal, and identity development. I chose 27 survey items from among 40 that asked students to rate the extent that that they believe their

university experiences contributed to facets of their growth. Response options for each question were: 5-Very Great, 4-Great, 3-Moderate (Avg.), 2-Little, 1-None.

The identity development scale consists of students' self-rating of the extent that their university experiences contributed to: developing ethical standards and values; learning about career options; the ability to set clear goals; developing a healthy lifestyle; developing self confidence; developing religious values; and developing a better understanding of self. The scale's Cronbach alpha of .819 indicates that the items within this scale are measuring the same concept and that there is a high inter-correlation between the items.

The items I chose for the interpersonal development scale include students' self-rating of the extent that their university experiences contributed to: growth in exercising rights, responsibilities, and privileges as a citizen; development of leadership skills; growth in working as a team member; getting along with people whose attitudes and opinions are different from self; participating in volunteer work; interacting with people from other racial groups or cultures; learning to be a more responsible family member; and the ability to listen effectively. The Cronbach alpha for this scale is .827.

The items I chose for the cognitive development scale include students' self-rating of the extent that their university experiences contributed to: a commitment to life long learning and intellectual development; growth in thinking and reasoning skills; developing problem-solving skills; growth in applying scientific knowledge and skills; growth in writing effectively; appreciating literature and the fine arts; growth in applying mathematics and statistics; reading with speed and accuracy; acquiring a broad general education; learning how to acquire new knowledge on own; learning how to think creatively; and the ability to apply and adopt knowledge to new situations. The Cronbach alpha measure of reliability for this scale is .880.

Independent Variables

In order to estimate the amount of development related to college experiences, it is important to include measures of student background characteristics in the model. These variables demonstrate the extent to which students' background characteristics contribute to the outcomes and control for differences across students, thereby creating a better estimate of the extent to which college experiences contribute to the outcomes (Astin, 1993; Pascarella & Terenzini, 2005). I used several student characteristics that are common influences on student development as controls in the current study (see Table 2). These control variables include personal and family characteristics: ethnicity, gender, whether at least one parent has a four-year college degree, and high school GPA (Astin, 2003; Pascarella & Terenzini).

Since I am looking at student involvement in out of class experiences, I followed Astin's (2003) suggestion to include a measure of students' "involvement proneness" (p. 26). I created a scale of involvement in high school activities consisting of six questions from the survey. The questions asked students to rate the extent to which they engaged in the following activities while in high school: extracurricular activities; exercising/playing sports; faith-based activities; studying with friends; talking with teachers outside of class; and volunteering/community service. Response options were: 5-Very Often, 4-Often, 3-Occasionally, 2-Rarely, and 1-Never. The Cronbach alpha for this scale is .665.

Pre-test measures of outcomes are also important in college impact models. According to Pascarella (2006), statistical controls and pre-test measures of the outcome being measured are the best means to separate the effects of the student's personal characteristics and experiences from the effects of college experiences when randomized experiments are not possible. In this case, I created three pre-test measures that paralleled the dependent measures. These pre-tests

are scales measuring identity development, interpersonal development, and cognitive development, which the students attribute to their high school experiences. The scales consist of questions parallel to those in the college development scales (see Tables 1 and 2 for details). Most college impact studies using student self-reported data as outcomes have not included pre-test measures, yet including these measures of students' receptivity to the influence of educational experiences will create a more accurate measure of the net impact of college (Pascarella, 2001).

In addition to the out of classroom experiences (the variables of interest described in the next section), I included several other college environment variables that could influence the outcomes. Because Astin (1993) suggests that the time of exposure to educational programs affects student development, I included a variable indicating whether students were a senior or not. The reference group is first-year students, since only these two groups were included in the survey. I included two variables measuring the amount of hours worked for pay both on and off campus. There have been mixed reviews about how working affects college outcomes, depending on how many hours a student works and whether it is on campus or off (Astin, 1993; Pascarella, Bohr, Nora, Desler, & Zusman, 1994; Pascarella & Terenzini 2005). Finally, I included a series of dichotomous variables representing whether students live on campus, in a fraternity or sorority house, off campus but nearby, or off campus three or more miles away. The research on the impact of student living situations on college outcomes has produced inconsistent results (Astin, 1993; Pascarella & Terenzini 2005). While all three of these factors (year in school, working, and living situation) have yielded conflicting results relative to college outcomes, I chose to include them because it seemed reasonable that they could affect student involvement in out of classroom experiences.

Research on college impact in the past has often lacked several characteristics which are necessary to measure the net effect of college: longitudinal data including pre-test measures of the outcomes, large samples of students, multiple measures of entering student characteristics to serve as controls, and multiple follow-up measures of student development, including both cognitive and affective outcomes (Astin, 1993; Pascarella & Terenzini 2005). I have tried to account for each of these items by choosing multiple dependent variables measuring three aspects of student development and including independent variables representing student background characteristics, students' propensity for involvement, their openness to attributing growth to educational experiences, and potentially relevant college experiences such as year in school, work, and residence.

Out of Classroom Experiences Variables

Based on my review of the literature, I created a series of independent variables representing interactions with faculty, staff, and peers, diversity experiences, and integrative experiences. These independent variables of interest (see Table 2) consist of seven scales measuring college out of classroom experiences. Each scale has a relatively high Cronbach alpha (ranging from .784 to .934), which indicates that each is reliably measuring an underlying construct. Table 2 shows the items included in each scale and the Cronbach alpha for each. Table 3 shows the means and standard deviations for all independent variables.

The first scale, quality of non-classroom interactions with faculty, includes survey questions about students' perceptions of whether their non-classroom interactions with faculty have influenced their intellectual and personal growth, and their career development. It also contains questions about whether they have developed a close, personal relationship with faculty and whether they are satisfied with the opportunities to meet and interact informally with faculty.

The Cronbach alpha is .855. The second scale, faculty interest in students, consists of three items pertaining to students perceptions that faculty are genuinely interested in students, that they are interested in helping student grow in more than academic areas, and that they are willing to spend time with students outside of class. This scale has a Cronbach alpha of .803.

Two additional scales, frequency of interaction with faculty and frequency of interaction with student affairs staff, measure the frequency with which students interact with faculty or student affairs staff to discuss ideas from readings or class, career concerns or plans, or personal matters. Each scale also includes an item measuring how often the student interacted with faculty or student affairs staff on non-course-related activities. The Cronbach alpha of each is .784 and .861 respectively.

The positive influence of peer interactions scale contains four items measuring the extent to which students have developed close relationships with other students, whether their friendships have been personally satisfying; and the extent to which their peers influence their personal and intellectual growth. The Cronbach alpha is .934. The integrative experiences scale, based on four questions from the survey, contains measures of the extent to which out of class experiences influence students' personal and intellectual growth. It also contains items measuring students' perceptions of whether out of class experiences help them to connect classroom learning with life events and to translate knowledge and learning from the classroom into knowledge. It has a Cronbach alpha of .867.

The final scale, Diversity Experiences and Interactions, includes items from eleven survey questions representing a range of diverse experiences. The questions ascertain the frequency students have: encountered diverse perspectives on campus (e.g., administrative offices, student activities, public forums, etc.); made friends with a student whose race is

different from their own; made friends with a student from another country; or been encouraged to make contact with students from different economic, social, racial, ethnic backgrounds. The questions also measure the frequency with which students have participated in serious discussions with other students about different lifestyles and customs and major social issues such as racial diversity, human rights, equality, or justice. They also ascertain the frequency with which students have had serious discussions with students who are different from them in their religious beliefs, political opinions, and philosophy of life or personal values. The final question included in the scale asks students how often they have had serious discussions with faculty and staff whose political, social, or religious opinions differed from their own. The Cronbach alpha of this scale is .902.

Multicollinearity Analysis

Correlations between these variables were reviewed to determine whether a collinearity problem may exist. Most correlations were well below the .6 level, indicating that they were not too correlated to be included in the regression analysis. However, living on campus was very highly and negatively correlated with being a senior at $-.894$. Similarly, living off campus within three miles was highly correlated with being a senior at $.741$. To test whether these items were multicollinear, I checked to see if their variance inflation factor (VIF) was greater than 10 (Myers, 1990; Stevens, 2002). The VIF of being a senior was 5.4; living on campus was 7.3; and living within three miles of campus was 3.5. Since these were below the Meyers and Stevens suggested guidelines, and the variables were conceptually important to the analyses, I left them in the models.

Missing Data Analysis

The missing data for the items included in the three dependent variables ranged from

7.4% to 7.6%. I analyzed the missing data by class year, sex, ethnicity, transfer status, and ACT composite score to ascertain whether there was a bias in the data. A series of Chi Square tests indicated there was no significant relationship between the missing data and any of these respondent characteristics. Given the unbiased nature and the relatively small amount of missing data, I proceeded by creating the three scales using the mean of the response values for the constituent items, as long as there were values for at least two-thirds of them.

The independent variables had less than 10% missing data. For variables that would not be considered outcomes and were not demographic characteristics, the missing value was imputed using the mean of each item for the entire data. I used listwise deletion on the regression analyses, creating a final analytic sample of 2,897 records, or 91.8% of the original sample.

Regression Analyses

I used ordinary least squares regression to analyze the effects of out of classroom experiences on each of the three dependent variables. I ran each analysis in two stages, first regressing each dependent variable – cognitive development, interpersonal development, and identity development – on the student characteristics and high school experiences: ethnicity is white, male, parent has a four year college degree, high school GPA, involvement in high school activities, and the appropriate pre-test (high school identity development, high school interpersonal development, or high school cognitive development). In the second stage of the three regressions, I added the college experience variables: senior, hours worked on campus, hours worked off campus, live on campus, live in a Greek house, live off campus nearby (with live off campus more than three miles left out as the reference variable). In this second stage of the regression, I also added the non-classroom college experiences: quality of non-classroom

interactions with faculty; faculty interest in students; frequency of interaction with faculty; frequency of interaction with student affairs staff; positive influence of peer interactions; integrative experiences; and diversity experiences and interactions.

I standardized (converted to z scores) the three dependent variables and all continuous independent variables. Therefore, the b coefficients indicate the amount of change in standard deviation of identity development, interpersonal development, and cognitive development, for each change in one standard deviation of the continuous independent variables.

Results

Table 4 shows the results of each of the regressions. The results of the first stage of each regression are listed under Model 1 and represent how students' background characteristics and high school experiences contribute to their cognitive, identity, and interpersonal development. The results of the second stage of each regression are listed under Model 2; they represent the effects of college experiences on student development in the three areas. All the models were statistically significant. Student characteristics and high school experiences accounted for 10.1% of the variance of identity development, 15.6% of the variance of interpersonal development, and 7.2% of the variance of cognitive development. Adding the college experiences to Model 2 of each regression significantly increased the amount of variance explained for each dependent variable. The full model (Model 2) explained 40.3% of the variance in identity development, 45.4% of the variance in interpersonal development, and 38.9% of the variance in cognitive development.

Student Characteristics and High School Experiences

Seven of the student characteristic variables are significant in one or more of the models. Being white (compared to being a student of color) has a very small (.023 standard deviations)

positive effect on interpersonal development, but that effect disappears when the college experiences are added to the model. Being male has a negative effect on identity development, interpersonal, and cognitive development (effect sizes are $-.143$, $-.146$, and $-.90$ standard deviations, respectively), but those effects also decrease (to $-.094$, $-.108$ and $-.146$) once college experiences are taken into account. Having one or more parent with a four-year college degree or higher (compared to no parents with a four-year college degree) was negatively associated with student development. The effect was $-.124$ standard deviations on identity development, which reduced to $-.129$ when college experiences were added to the model; $-.137$ standard deviations on interpersonal development, which reduced to $-.129$ in model 2; and $-.150$ standard deviations on cognitive development, which reduced to non-significance in model 2.

High school GPA has a very small negative effect on identity ($-.051$ standard deviations) and cognitive development ($-.045$ standard deviations), both of which are non-significant in model 2. Involvement in high school activities has an effect on all three outcomes: $.113$ standard deviations on identity development, which reduces to non-significance in the full model; $.175$ standard deviations on interpersonal development, which reduces to $.069$ in the full model; and $.090$ standard deviations on cognitive development, which reduces to non-significance in the full model.

All three pre-test variables had an effect on their respective outcomes. For every one standard deviation change in high school identity development, college identity development increased by $.230$ standard deviations. When college experiences are added to the model, high school identity development still influences college identity development by $.199$ standard deviations. Similarly, high school interpersonal development affects college interpersonal development ($.260$ standard deviations) and high school cognitive development affects college

cognitive development (.213 standard deviations). In the full model, the effects of high school development reduce slightly, to .222 standard deviations and .177 standard deviations, respectively.

College Experiences

Being a senior (as opposed to a first-year) student has no effect on any of the three dependent variables. Working on campus has a very small negative effect on identity development (-.032 standard deviations), as does working off campus (-.034). While working on or off campus does not appear to affect interpersonal development, it has very small negative effects on cognitive development (-.050 and -.036 respectively). The only residential situation which produces statistically significant effects is living on campus, compared to living off campus more than three miles away. It effects identity development by -.155 standard deviations and interpersonal development by -.187 standard deviations.

Out of Classroom Experiences

As hypothesized, many of the college out of classroom experiences positively affect identity, interpersonal, and cognitive development. Five experiences have an effect on all three forms of development: quality of non-classroom interactions with faculty; faculty in interest in students; positive influence of peer interactions; integrative experiences; and diversity experiences and interactions. The effects for all of these variables are modest. The frequency of interaction with student affairs staff variable has a very small but statistically significant impact on identity and interpersonal development, but not cognitive development. Frequency of interactions with faculty has no statistically significant effect on any of the outcomes.

Identity development. Identity development is influenced positively by the quality of non-classroom interactions with faculty, faculty interest in students, frequency of interaction

with student affairs staff, positive influence of peer interactions, academically integrative experiences, and diversity experiences and interactions. The impact of these experiences ranges from .053 to .262 standard deviations. The most substantive effects result from faculty interest in students (.140 standard deviations), positive influence of peer interactions (.172 standard deviations), and integrative experiences (.262 standard deviations).

Interpersonal development. Interpersonal development is positively influenced by all of the same experiences that positively influence identity development -- quality of non-classroom interactions with faculty, faculty interest in students, frequency of interaction with student affairs staff, positive influence of peer interactions, integrative experiences, and diversity experiences and interactions -- with effect sizes ranging from .048 to .244 standard deviations for these variables. The most substantive impacts on interpersonal development are associated with faculty interest in students (.130 standard deviations), positive influence of interaction with peers (.139 standard deviations), and integrative experiences (.244 standard deviations).

Cognitive development. Cognitive development is significantly effected by one less experience than identity and interpersonal development; frequency of interactions with student affairs staff has no effect. Quality of non-classroom interactions with faculty, faculty interest in students, positive influence of peer interactions, integrative experiences, and diversity experiences and interactions positively influence cognitive development with effect sizes ranging from .077 to .292 standard deviations. The most substantive effects result from quality of non-classroom interactions with faculty (.135 standard deviations), faculty interest in students (.163 standard deviations), and integrative experiences (.292 standard deviations).

Discussion

This study provides methodologically sound support indicating that out of classroom

experiences positively influence college students' identity, interpersonal, and cognitive development. The regression models include personal characteristics and high school experiences relevant to the outcomes in order to estimate the impact of college experiences net of background characteristics and experiences (Astin, 1993; Astin 2003; Pascarella & Terenzini, 2005). The regression models also include pre-test measures of the outcomes as another means to more accurately assess the impact of college net of where students begin (Astin, 2003; Pascarella, 2006). Pre-test measures are one of the few ways to make student self-reported outcomes more interpretable – they shed light on how likely it is for students to attribute their growth to educational experiences (Pascarella, 2001). These features, in addition to good data, reliable measures, attention to missing data and collinearity, and a well-specified model based on theory, make this a more statistically sound research model than many cross-sectional analyses of college impact and lend weight to the significance of the results.

The results of this study indicate that out of classroom experiences do affect identity, interpersonal, and cognitive development in modest but statistically significant ways. While student characteristics and high school experiences such as sex, parent's education, high school GPA, involvement in high school activities, and development attributed to high school experiences account for small amounts of the variance, the out of classroom experiences accounted for more of the variance in identity development (39.9%), interpersonal development (29.8%), and cognitive development (32.1%). Furthermore, once the out of classroom college experiences were added to the model, the effects attributable to individual characteristics and high school experiences were reduced and in some cases became non-significant. This indicates that college experiences do influence student development, regardless of individual student characteristics and high school experiences.

The positive influence of out of classroom experiences on all three of the dependent variables was consistent with prior research. The importance of faculty and peer influence cannot be underestimated (Astin, 1993; Kuh, 1999; Pascarella & Terenzini, 2005). While I found no other college impact studies analyzing the influence of student affairs staff on student development, it seemed reasonable that if faculty influence students, then student affairs staff do too. This was reflected in my results. It is not surprising that students affairs staff are more likely to influence psychosocial development (e.g. identity and interpersonal), since that is the foundation of their work (American Council on Education, 2004; NASPA, n.d.). This research supports the idea that diversity experiences and integrative experiences are important influences on college outcomes. How students and faculty interact may be more important than how often they interact, given that frequency of interactions with faculty did not influence the outcomes.

Although the effect sizes for most of the significant variables were modest, this is similar to other research on out of class experiences (Terenzini, Pascarella, & Blimling, 1996). It has been suggested that the cumulative effect of out of classroom experiences may be greater than the sum of its parts, especially when those experiences reinforce and support one another (Pascarella & Terenzini, 1991; Terenzini, Pascarella, & Blimling). Nevertheless, this study replicates findings of other research that suggests that out of classroom experiences positively affect student learning and development. Therefore, some general implications are drawn and described in the following section.

Implications

The results of this study have important implications for campus environments and further research. First, faculty interactions with students and students' perceptions that faculty are sincerely concerned with student development affected identity, interpersonal, and cognitive

development in this study. This adds to the literature on the positive effects of faculty-student interactions and should reinforce for faculty that their personal relationships with students do matter. Faculty should attempt to make personal connections with students, interact with them outside of the classroom on educationally meaningful activities, and show an interest in their development and success. However, the frequency of interactions did not affect the outcomes, suggesting that quality of interactions is more important than quantity. Further research on the influence of faculty on student development should attempt to ascertain the specific types of interactions that have the greatest influence on students.

Second, the results of this study also validate that student affairs work, which occurs primarily outside of the classroom, has a positive effect on multiple areas of student development. The results suggest that student affairs practitioners should continue to find ways to help students have meaningful out of classroom experiences where they can interact with faculty and peers, interact with individuals different from themselves, and connect classroom knowledge to other experiences. Student affairs practitioners should also seek ways to help students develop mature relationships with each other, rather than providing social opportunities for simply “mixing and mingling.” Student affairs practitioners should also be aware that their personal interactions with students influence identity and interpersonal development and therefore create educationally purposeful interactions. More research specifically on the impact of student affairs work and student affairs staff on college impact is warranted.

Third, students develop cognitively, personally, and interpersonally when they have integrative experience that help connect their classroom learning to their personal lives. In fact, of all the out of classroom experiences tested in this research, the opportunity to make meaning of academic experiences beyond the classroom had the largest effect on all three areas of

development. This implies that students need opportunities in the classroom to connect the subject matter to their personal experiences, and they need opportunities outside of the classroom to connect academic knowledge to their understanding of the world. Both require seamless collaboration for connecting learning in and out of the classroom. Of the many out of classroom experiences studied, integrative learning is perhaps the most difficult to define. Further research should seek out the specific activities and experiences that help students integrate their learning.

Finally, diversity is a compelling issue that does contribute to student development, affecting identity, interpersonal, and cognitive growth. Students develop in these areas when they have the opportunity to engage with others who are different from themselves in terms of backgrounds and beliefs. This implies that campuses must recruit and retain diverse students, faculty, and staff and encourage meaningful interactions between individuals. The diversity research that is currently extant can be enhanced by research that looks beyond ethnicity and race and attempts to understand how students learn to interact across all kinds of differences, including politics, religion, life philosophy, culture, and nationality.

Limitations

Several limitations to this study affect the extent to which the findings can be generalized. First, the sample was limited to a single, predominantly white institution. Second, only 36.5% of those sampled responded to the survey. Third, while the results indicate the extent to which out of classroom experiences effect identity, interpersonal, and cognitive development, these measures are self-reported. Every attempt has been made to adjust for these limitations methodologically and statistically, yet still they restrict the generalizability of the results.

Conclusion

This quantitative, single-institution study demonstrates that -- after controlling for individual characteristics, high school experiences, and pre-test measures -- out of classroom experiences affect identity, interpersonal, and cognitive development. Experiences that had an influence across all three outcomes were quality of non-classroom interactions with faculty, faculty interest in students, positive influence of peer interactions, diversity experiences and interactions, and integrative experiences that provide opportunities to apply classroom learning to personal experiences. Additionally, frequency of interaction with student affairs staff had a small impact on identity and interpersonal development. The effects of these experiences were modest, although comparable to prior research, which reinforces the idea that the cumulative effect of out of classroom experiences may be greater than the individual experiences, especially when those experiences are mutually reinforcing.

References

- ACPA. (1996). *The student learning imperative: Implications for student affairs*. Retrieved May 8, 2006, from <http://www.acpa.nche.edu/sli/sli.htm>
- ACPA & NASPA. (2004). *Learning reconsidered: A campus-wide focus on the student experience*. Washington, DC: Authors.
- American Council on Education. (2004). The student personnel point of view (1937). In E. J. Whitt (Ed.), *ASHE reader on college student affairs administration* (pp. 5-12). Boston: Pearson Custom Publishing.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, A. W. (2003). Studying how college affects students: A personal history of the CIRP. *About Campus*, 8(3), 21-28.
- Bradley, J. S., & Graham, S. W. (2000). The effect of educational ethos and campus involvement on self-reported college outcomes for traditional and nontraditional undergraduates. *Journal of College Student Development*, 41(5), 488-502.
- Braskamp, L. (2007). Three "central" questions worth asking [Electronic version]. *Journal of College & Character*, IX(1), 1-7. Retrieved October 23, 2007, from <http://collegevalues.org/pdfs/Braskampthreecentralquestions.pdf>
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3-7.
- Flowers, L. A. (2004). Examining the effects of student involvement on African American college student development. *Journal of College Student Development*, 45(6), 633-654.

- Hu, S., & Kuh, G. D. (2003). Diversity experiences and college student learning and personal development. *Journal of College Student Development, 44*(3), 320-334.
- Kuh, G. D. (1993). In their own words: What students learn outside the classroom. *American Educational Research Journal, 30*(2), 277-304.
- Kuh, G. D. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education, 66*(2), 123-155.
- Kuh, G. D. (1996). Guiding principles for creating seamless learning environments for undergraduates. *Journal of College Student Development, 37*(2), 135-148.
- Kuh, G. D. (1999). Setting the bar high to promote student learning. In G. S. Blimling, E. J. Whitt & Associates (Eds.), *Good practice in student affairs: Principles to foster student learning* (pp. 67-89). San Francisco: Jossey-Bass Publishers.
- Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2005). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.
- Kuh, G. D., Schuh, J. H., Whitt, E. J., & Associates, A. (1991). *Involving colleges: Successful approaches to fostering student learning and development outside the classroom*. San Francisco: Jossey-Bass.
- Lambert, A. D., Terenzini, P. T., & Lattuca, L. R. (2007). More than meets the eye: Curricular and programmatic effects on student learning. *Research in Higher Education, 48*(2), 141-168.
- Myers, R. (1990). *Classical and modern regression with applications* (2nd ed.). Boston: Duxbury Press.
- NASPA. (n.d.). *The student personnel point of view, 1949*. Retrieved April 2, 2007, from http://www.naspa.org/pubs/StudAff_1949.pdf

- Pascarella, E. T. (2001). Using student self-reported gains to estimate college impact: A cautionary tale. *Journal of College Student Development, 42*(5), 488-492.
- Pascarella, E. T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development, 47*(5), 508-520.
- Pascarella, E. T., Bohr, L., Nora, A., Desler, M., & Zusman, B. (1994). Impacts of on-campus and off-campus work on first year cognitive outcomes. *Journal of College Student Development, 35*(5), 364-370.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students (Vol. 2): A third decade of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., Whitt, E. J., Nora, A., Edison, M., Hagedorn, L. S., & Terenzini, P. T. (1996). What have we learned from the first year of the National Study of Student Learning? *Journal of College Student Development, 37*(2), 182-192.
- Seidman, A., & Brown, S. C. (2006). Integrating outside learning with the classroom experience: The student learning imperative. *Education, 127*(1), 109-114.
- Springer, L., Terenzini, P. T., Pascarella, E. T., & Nora, A. (1995). Influences on college students' orientations toward learning for self-understanding. *Journal of College Student Development, 36*(1), 5-18.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Hillsdale, NJ: Erlbaum.
- Terenzini, P. T., & Pascarella, E. T. (1994). Living with myths: Undergraduate education in America. *Change, 26*(1), 28-32.

- Terenzini, P. T., Pascarella, E. T., & Blimling, G. S. (1996). Students' out of classroom experiences and their influence on learning and cognitive development: A literature review. *Journal of College Student Development, 37*(2), 149-162.
- Terenzini, P. T., Springer, L., & Pascarella, E. T. (1993, November). *In- and out-of-class influences affecting the development of students' intellectual orientations*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Pittsburgh, PA.
- Terenzini, P. T., Springer, L., Pascarella, E. T., & Nora, A. (1995). Influences affecting the development of students' critical thinking skills. *Research in Higher Education, 36*(1), 23-39.
- U.S. Department of Education. (2006). *A test of leadership: Charting the future of U.S. higher education*. Retrieved May 21, 2007, from <http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf>

Table 1 - Dependent Variables*Identity Development, Cronbach Alpha=.819*

A seven-item scale taken from survey questions -- students were asked to indicate the extent that their university experiences contributed to:

- developing ethical standards and values
- learning about career options
- the ability to set clear goals
- developing a healthy lifestyle
- developing self confidence
- developing religious values
- developing a better understanding of self

Response options were: 5-Very Great, 4-Great, 3-Moderate (Avg.), 2-Little, 1-None

Interpersonal Development, Cronbach Alpha=.827

An eight-item scale taken from survey questions – students were asked to indicate the extent that their university experiences contributed to:

- growth in exercising rights, responsibilities, and privileges as a citizen
- development of leadership skills
- growth in working as a team member
- getting along with people whose attitudes and opinions are different from self
- participating in volunteer work
- interacting with people from other racial groups or cultures
- learning to be a more responsible family member
- the ability to listen effectively

Response options were: 5-Very Great, 4-Great, 3-Moderate (Avg.), 2-Little, 1-None

Cognitive Development, Cronbach Alpha=.880

A twelve-item scale taken from survey questions -- students were asked to indicate the extent that their university experiences contributed to:

- a commitment to life-long learning and intellectual development
- growth in thinking and reasoning skills
- developing problem-solving skills
- growth in applying scientific knowledge and skills
- growth in writing effectively
- appreciating literature and the fine arts
- growth in applying mathematics and statistics
- reading with speed and accuracy
- acquiring a broad general education
- learning how to acquire new knowledge on own
- learning how to think creatively
- the ability to apply and adopt knowledge to new situations

Response options were: 5-Very Great, 4-Great, 3-Moderate (Avg.), 2-Little, 1-None

Table 2 – Independent Variables***Student Characteristics & High School Experiences (Control Variables)****Ethnicity is White*

A single item received from the university registrar. Reference category is Students of Color. Coded: 1=Yes, 0=No

Male

A single item received from the university registrar. Reference category is Female. Coded: 1=Yes, 0=No

College Educated Parent(s)

Computed from two items taken from the survey -- students were asked to list the highest level of education their mother and father received. Reference category is Neither parent has a 4 yr college education. Recoded into a dummy variable indicating those with at least one parent with a B.A. degree. Coded: 1=Yes, 0=No

High School GPA

A single item received from the university registrar. Coded: 1=Yes, 0=No

Involvement in High School Activities, Cronbach Alpha=.665

A six-item scale taken from these survey questions:

- In HS, engaged in extracurricular activities
 - In HS, engaged in exercising/playing sports
 - In HS, engaged in faith-based activities
 - In HS, engaged in studying with friends
 - In HS, engaged in talking with teachers outside of class
 - In HS, engaged in volunteering/community service
- Response options were: 5-Very Often, 4-Often, 3-Occasionally, 2-Rarely, 1-Never

High School Identity Development, Cronbach Alpha=.807

A seven-item scale taken from survey questions -- students were asked to indicate the extent that their **high school experiences** contributed to aspects of identity development. Items and response options parallel those in the dependent variable (see Table 1).

High School Interpersonal Development, Cronbach Alpha=.829

An eight-item scale taken from survey questions -- students were asked to indicate the extent that their **high school experiences** contributed to aspects of interpersonal development. Items and response options parallel those in the dependent variable (see Table 1).

High School Cognitive Development, Cronbach Alpha=.904

A twelve-item scale taken from survey questions -- students were asked to indicate the extent that their **high school experiences** contributed to aspects of cognitive development. Items and response options parallel those in the dependent variable (see Table 1).

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*College Experiences**Senior*

A single item received from the university registrar. Reference category is First Year Students. Coded: 1=Yes, 0=No

Hrs On Campus Working

A single item taken from the survey – students were asked to specify the number of hours per week spent working for pay on campus during the current semester.

Response options were: 0- 0 Hours, 1- 1-5 Hours, 2- 6-10 Hours, 3- 11-15 Hours, 4- 16-20 Hours, 5- 21-25 Hours, 6- 26-30 Hours, 7-More than 30 Hours

Hrs Off Campus Working

A single item taken from the survey – students were asked to specify the number of hours per week spent working for pay off campus during the current semester.

Response options were: 0- 0 Hours, 1- 1-5 Hours, 2- 6-10 Hours, 3- 11-15 Hours, 4- 16-20 Hours, 5- 21-25 Hours, 6- 26-30 Hours, 7-More than 30 Hours

Live on campus

Computed from a single item on the survey that asked students to identify where they live. Coded: 1=Yes, 0=No

Live in a Greek house

Computed from a single item on the survey that asked students to identify where they live. Coded: 1=Yes, 0=No

Live off campus nearby

Computed from a single item on the survey that asked students to identify where they live. Coded: 1=Yes, 0=No

Live off campus more than three miles away

Computed from a single item on the survey that asked students to identify where they live. Coded: 1=Yes, 0=No

Quality of Non-classroom Interactions with Faculty, Cronbach Alpha=.855

A five-item scale taken from these survey questions:

- Non-classroom interactions with teachers have had a positive influence on my personal growth, values, and attitudes
- Non-classroom interactions with teachers have had a positive influence on my intellectual growth and interest in ideas
- Non-classroom interactions with teachers have had a positive influence on my career goals and aspirations
- Since coming to this institution, I have developed a close personal relationship with at least one teacher
- I am satisfied with the opportunities to meet and interact informally with teachers

Response options were: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Faculty Interest in Students, Cronbach Alpha=.803

A three-item scale taken from these survey questions:

- Teachers are genuinely interested in students
- Most teachers with whom I've had contact at UI are interested in helping students grow in more than academic areas
- Most teachers with whom I've had contact at UI are willing to spend time outside of class to discuss issues of interest and importance to students

Response options were: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

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Frequency of Interaction with Faculty, Cronbach Alpha=.784

A four-item scale taken from these survey questions:

- Frequency interacted with teachers to discuss ideas from reading or class
- Frequency interacted with teachers to discuss career concerns and plans
- Frequency interacted with teachers on non-coursework activities
- Frequency interacted with teachers to discuss personal matters

Response options were: 5-Very Often, 4-Often, 3-Occasionally, 2-Rarely, 1-Never

Frequency of Interaction with Student Affairs Staff, Cronbach Alpha=.861

A four-item scale taken from these survey questions:

- Frequency interacted with student affairs to discuss ideas from reading or class
- Frequency interacted with student affairs to discuss career concerns or plans
- Frequency interacted with student affairs on non-coursework activities
- Frequency interacted with student affairs to discuss personal matters

Response options were: 5-Very Often, 4-Often, 3-Occasionally, 2-Rarely, 1-Never

Positive Influence of Peer Interactions, Cronbach Alpha=.934

A four-item scale taken from these survey questions:

- My relationships with other students have had a positive influence on my personal growth, attitudes, and values
- My relationships with other students have had a positive influence on my intellectual growth and interest in ideas
- Have developed close, personal relationships with other students
- Friendships with students have been personally satisfying

Response options were: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Integrative Experiences, Cronbach Alpha=.867

A four-item scale taken from these survey questions:

- Out of class experiences help me connect classroom learning with life events
- Out-of-class experiences help me translate knowledge and understanding from the classroom into action
- Out of class experiences positively influenced my intellectual growth and interest in ideas
- Out of class experiences positively influenced my personal growth, attitudes, values

Response options were: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Diversity Experiences and Interactions, Cronbach Alpha=.902

An eleven-item scale taken from these survey questions:

- Frequency of serious conversations with students of a race or ethnicity different from own
- Frequency of diverse perspectives encountered on campus (administrative offices, student activities, public forums, etc.)
- Frequency made friends with a student whose race is different from own
- Frequency made friends with a student from another country
- Frequency of serious discussions with other students about different lifestyles and customs
- Frequency of serious discussions with other students about major social issues such as racial diversity, human rights, equality, or justice
- Frequency of serious discussions with students whose religious beliefs were different from own
- Frequency of serious discussions with students whose political opinions were different from own
- Frequency of serious discussions with students whose philosophy of life or personal values were different from own
- Frequency encouraged to make contact with students from different economic, social, racial, ethnic backgrounds
- Frequency of serious discussions with faculty and staff whose political, social, or religious opinions differed from own

Response options were: 5-Very Often, 4-Often, 3-Occasionally, 2-Rarely, 1-Never

Table 3 –Descriptive Statistics for Independent Variables, N=2,897

	Mean	SD
<i>Background Characteristics and High School Experiences:</i>		
Ethnicity is White	.888	.315
Male	.460	.498
At Least One Parent Has a 4 yr College Degree or Higher	.658	.474
High School GPA *	-.079	1.026
Involvement in HS Activities Scale *	-.019	1.009
HS Identity Dev. Scale *	-.009	1.031
HS Interpersonal Dev. Scale *	-.040	.997
HS Cognitive Dev. Scale *	-.040	1.033
<i>College Experiences:</i>		
In Fourth Year of College	.575	.494
Hrs On Campus Working *	.018	1.016
Hrs Off Campus Working *	.051	1.036
Student Lives on Campus	.431	.495
Student Lives in a Fraternity or Sorority House	.012	.108
Student Lives off Campus But Nearby	.456	.498
Student Lives off Campus – More Than 3 Miles Away	.101	.302
Quality of non-classroom Interactions w/ Faculty *	.007	1.014
Faculty Interest in Students *	-.013	1.005
Frequency of Interaction with Faculty *	-.147	1.027
Freq of Interaction with Student Affairs Staff *	.059	1.032
Positive Influence of Peer Interactions *	.013	1.024
Integrative Experiences *	-.018	1.027
Diversity Experiences and Interactions *	.007	1.028

* Variable is standardized.

Table 4 - Results of OLS Regression on Identity Development, Interpersonal Development, and Cognitive Development
N=2,897

	Identity Development				Interpersonal Development				Cognitive Development			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
(Constant)	.171	.060	.268	.090	.151	.058	.204	.086	.096	.061	.056	.047
Ethnicity is White	-.022	.056	-.029	.046	.023**	.054	.026	.044	.066	.057	-.031	.031
Male	-.143**	.036	-.094**	.030	-.146**	.035	-.108**	.029	-.090*	.037	-.146**	.031
Parent Has a 4 yr College Degree	-.124**	.037	-.129**	.031	-.137**	.036	-.129**	.029	-.150**	.038	-.001	.015
High School GPA	-.051**	.018	-.014	.015	-.073	.017	-.021	.014	-.045*	.018	-.002	.016
Involvement in HS Activities Scale	.113**	.020	.010	.017	.175**	.019	.069**	.016	.090**	.019	.056	.047
HS Identity Dev	.230**	.019	.199**	.016					NA	NA	NA	NA
HS Interpersonal Dev					.260**	.019	.222**	.016	NA	NA	NA	NA
HS Cognitive Dev									.213**	.018	.177**	.015
Senior			-.003	.067			.049	.065			.105	.068
Hrs Work On Campus			-.032*	.016			-.015	.015			-.050**	.016
Hrs Work Off Campus			-.034*	.016			-.003	.016			-.036*	.016
Live on Campus			-.155*	.077			-.187*	.074			-.139	.078
Live in Greek House			-.101	.141			.045	.135			-.180	.143
Live off campus nearby			-.083	.052			-.058	.050			-.083	.053
Qual of Non-classroom Interactions w/ Faculty			.118**	.019			.090**	.018			.135**	.019
Faculty Interest in Students			.140**	.017			.130**	.016			.163**	.017
Freq of Interaction with Faculty			.003	.019			.030	.018			-.029	.019
Freq of Interaction with Student Affairs Staff			.062**	.016			.048**	.015			.007	.016
Positive Influence of Peer Interactions			.172**	.016			.139**	.016			.128**	.017
Integrative Experiences			.262**	.017			.244**	.016			.292**	.017
Diversity Experiences and Interactions			.053**	.016			.120**	.016			.077**	.017
R ²	.101		.403		.156		.454		.072		.389	
Change in R ²			.399				.298				.321	

* p<.05, ** p < .01

All non-dichotomous variables are standardized.