Exploring the Effects of a HIP Culture on Campus: Measuring the Relationship between the Importance Faculty Place on High-Impact Practices and Student Participation in Those Practices

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Abstract

This study explores campus cultures that value high-impact practices by examining the relationship between the importance faculty place on high-impact practices and student participation in six different educationally beneficial high-impact activities. We further explore how faculty and institutional characteristics affect the importance faculty place on undergraduate high-impact practice participation.

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In 2007, both the *Association of American Colleges and Universities* and the *National Survey of Student Engagement* (NSSE) encouraged institutional stakeholders to foster the development of High-Impact Practices (HIPs), collegiate experiences that qualify as significant learning opportunities, such as internships and field experiences, learning communities, service-learning, study abroad, undergraduate research, and culminating senior experiences (e.g., capstone courses). These experiences distinguish themselves from other learning opportunities by emphasizing collaboration between diverse students, mentorship from engaged faculty members, and feedback that is rigorous; furthermore, these experiences have the potential to be described by students as "life-changing" (Kuh, 2008). These HIPs have been linked to substantial positive student outcomes, such as increases in retention (particularly with racially underrepresented students), higher GPAs, cognitive development, deeper learning practices, greater satisfaction and perceived learning, and improved civic outcomes (Astin, 1993; Astin & Sax, 1998; Brownell & Swaner, 2010; Finley & McNair, 2013; Kuh, 2008; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Kuh & O'Donnell, 2013; Mayhew & Engberg, 2011; Pascarella & Terenzini, 1991, 2005; Webber, Krylow, & Zhang, 2013).

Individual faculty members certainly play key roles in providing or facilitating HIPs. They lead many learning communities and service-learning courses and experiences, supervise internships and field experiences, guide students on certain types of study abroad trips, and facilitate and evaluate senior capstone projects. However, the number of faculty actually leading or facilitating HIPs can be quite small on a campus even when student participation is high. This, coupled with research findings that show that the importance faculty place on undergraduate

research (a particular HIP) is about as important as faculty participation in that HIP (Webber, Nelson Laird, & BrckaLorenz, 2013), suggests that campus culture may play a role in promoting HIP participation. However, beyond undergraduate research, the link between faculty importance and student participation in HIPs is less well understood.

The main purpose of this paper is to establish a connection between the importance faculty place on HIPs (a measure of institutional culture) and participation in those HIPs by students. First, for each HIP in our study, we examine the connection between the importance faculty place on the HIP and student participation in that HIP. We do this for a wider array of HIPs than have been studied to date. Second, we determine the empirical link between the average importance faculty place on HIPs generally and the average number of HIPs participated in by students at the campus level. Finally, to help practitioners and scholars understand the factors that influence the importance faculty place on HIPs, we examine individual- and institution-level predictors of the importance faculty place on HIPs.

High-Impact Practices and Faculty

High-Impact Practices

In the 2008 AAC&U report, *High-impact educational practices: What they are, who has access to them, and why they matter*, Kuh defines HIPs as learning opportunities that, "engage participants at levels that elevate their performance across multiple engagement and desired-outcomes measures" (p. 14). HIPs distinguish themselves from traditional engagement behaviors (like participating in class) in several ways (Kuh, 2008, 2013). First, students participating in a HIP are guided by high expectations and comprehensive feedback from the faculty and peers with whom they interact during this learning opportunity. Second, HIPs are intentionally designed to allow students to reflect on their learning, apply what they have learned to real-world

situations, and demonstrate new knowledge and skills gained. Lastly, these learning opportunities require effort on behalf of the students and allow participants to interact with people different from themselves.

Despite the clarity of the definition of a HIP, researchers are inconsistent with regards to which HIPs they study. NSSE measures student participation in six HIPs: living in a learning community, participating in service-learning, conducting research with faculty, holding an internship, studying abroad, and completing a culminating senior experience. AAC&U also includes first-year seminars, common intellectual experiences (e.g., core curriculum), writing-intensive courses, and diversity/global learning – creating a list of ten HIPs. Kuh (2009) even mused that opportunities such as, "writing for the student newspaper, working in an office or program on campus, participating in an honors program, being a leader for a student organization or campus, committee, and playing intercollegiate athletics" might also meet the criteria of a HIP; however these opportunities often go understudied because too few students have access to them (p. 698).

Although there may be some inconsistencies about *which* HIPs to study, researchers have measured *how* HIPs are positively related to important student outcomes and personal development. Participation in HIPs has been linked to increases in student outcomes such as persistence, graduation, and academic performance (grade point average) (Brownell & Swaner, 2010; Kuh, 2008). In addition, student participation in HIPs has been shown to have a positive relationship with individual student engagement (e.g., level of academic challenge, active and collaborative learning, student-faculty interaction, and supportive campus environment) and student learning (e.g., deep learning, personal and practical gains). These overarching benefits underscore the contribution of HIPs toward the holistic development of the student (Wawrzynski

& Baldwin, 2014). However, the benefits of HIPs are not limited to the student; they also provide institutional stakeholders with a means to enhance educational quality.

HIPs are important because they serve as a vehicle to achieve ambitious goals of the academy, such as: integrating classroom learning, bridging institutional missions with student goals, and connecting disjointed aspects of the colligate experience (Wawrzynski & Baldwin, 2014). Furthermore, HIPs offer institutions the opportunity to enact frequently touted missionary goals, such as promoting research or preparing global citizens (Kuh, 2013). For example, undergraduate research with faculty provides an opportunity for students to apply what they have learned as underclass students; exercise research skills that further the productivity of their institution; and combine faculty mentorship, peer collaboration, and physical space (labs, libraries, offices) through a singular project. Some argue the combining HIPs can enhance their benefits suggesting that, for example, students participating in research while living in a thematic community related to that field of research or holding an internship that creates a product for an interested client likely magnifies learning because of the multiple potential connecting points between content, prior learning, and personal experience (Kuh, 2010).

Each of the six HIPs measured by the NSSE have been shown to contribute to the development of participating students. Living in a learning community has been linked to higher GPAs, increases in active and collaborative learning and student-faculty interactions, gains in self-reported learning, and escalated levels of effort (Rocconi, 2011; Zhao & Kuh, 2004). Participating in service-learning has been proven to increase participants' interpersonal and multicultural communication skills, charitable behavior, and intrapersonal development (Chesbrough, 2011; Keen & Hall, 2009; Mayhew & Engberg, 2011). Conducting research with faculty not only allows students to learn about their area of research, gain technical skills, or

enhance critical thinking, but students also increase social capital by being able to list the experience on their resume and gaining insight about graduate school (Craney, Mckay, Mazzeo, Morris, Prigodich, & de Groot, 2011; Hu, Scheuch, Schwartz, Gayles, & Li, 2008; Lopatto, 2004, 2007). Holding an internship has been shown to increase students' openness to diversity, socially responsible leadership skills, professional development, and sense of independence (Kilgo, Sheets, & Pascarella, 2014; Thiry, Laursen, & Hunter, 2011). Students who have studied abroad report growth in the areas of intercultural sensitivity, interpersonal accommodation (patience or flexibility), and personal identity development (Cisneros-Donahue, Krentler, Reinig, & Sabol, 2012; Savicki, & Cooley, 2011). Research on completing a culminating senior experience has shown a connection between this HIP and students thinking imaginatively, applying theory to practice, synthesizing ideas, and integrating course concepts (Kinzie, 2013; NSSE, 2007). The multitude of benefits represented by these HIPs creates a compelling narrative for institutions to foster these learning opportunities. Hosting HIPs is important because they lead to the aforementioned student learning and development and, in the aggregate, contribute to the overall quality of education at an institution.

Faculty Collectively Influence What Students Do

While there is a mountain of evidence showing that the individual interactions students have with faculty meaningfully affect student learning and development (Kuh & Hu, 2001; Pascarella & Terenzini, 2005), evidence—though a much smaller amount—shows that the collective practices and values of faculty members affect the student experience. Wider use of and/or emphasis on active, collaborative, and experiential learning techniques at the institutional level enhances students' experiences and outcomes (Umbach & Wawrzynski, 2005).

Umbach and Wawryzinski's (2005) study is significant because it shows that greater emphasis by faculty members, as a group, on active and collaborative learning, for example, is positively related to greater student use of active and collaborative learning practices. Further, they showed that the greater faculty emphasized one form of student engagement, the greater the likelihood that students participated in a range of effective educational practices. In other words, as those scholars argue, the more the campus culture emphasizes and values effective practice, the more likely students will be to engage in those practices and gain from them.

One of the measures used by Umbach and Wawryzinski (2005) captured the importance faculty members on a campus place on eight HIPs and foreign language coursework. Their study showed that this institution-level measure correlated with higher levels of academic challenge, student-faculty interaction, active and collaborative learning, and student self-reported gains in learning and development among first-year students and seniors, even after controlling for the effects of type of institution, selectivity, and size. Perhaps because their work predated Kuh's (2008), Umbach and Wawryzinski (2005) overlooked connecting the importance measure to student participation in HIPs.

Umbach and Wawrzinski did use the average HIP importance measure as one of six measures combined to create an indicator of what they called "a culture where faculty emphasize best practices in effective undergraduate education" (p.161). They found that their culture of effective practice measure influenced nearly all the student measures in their study (i.e., a culture of effective practice impacts student behavior). Our study examines whether the HIP part of the effective practice culture influences student participation in HIPs. Fortunately, a few other scholars have explored the connection between HIP faculty culture and HIP participation, but more needs to be done.

Empirically Linking Faculty to High-Impact Practices

Work on a specific HIP, undergraduate research, shows directly that the importance faculty place on a HIP is positively related to student participation in that HIP (Kuh, Chen, & Nelson Laird, 2007; Webber, Nelson Laird, & BrckaLorenz, 2013). However, the link between the importance faculty place on other individual HIPs and student participation in those HIPs remains underexplored. Though Kuh (2008) showed a positive connection between faculty importance and four HIPs (learning communities, culminating experiences, undergraduate research, and study abroad) little detail is given in his monograph about the analyses or results.

There are also no analyses to date that look at participation in multiple HIPs at a time. With some scholars (e.g., Kuh, 2008) and organizations (e.g., AAC&U and NSSE) encouraging participation in multiple HIPs during the college career, it is important to have an understanding of how much campus culture affects cumulative measures of HIP participation and some sense of how to influence that culture. This study attempts to provide evidence as institutions seek to make their campus cultures more HIP so that more of their students can participate.

Purpose and Research Questions

The purpose of our study then is to explore the extent to which the importance faculty members place on individual HIPs influence student participation in those HIPSs. Since we examine multiple HIPs, we document effects for a wider range of HIPs than examined to date. Also, to extend the literature in a new direction, we use a general indicator of the importance faculty place on HIPs and examine the relationship of that measure (an indicator of a HIP culture) and the number of HIPs students participate in on a campus. Further, to help scholars and practitioners consider ways to change this aspect of campus culture, we aimed to understand

the faculty and institutional characteristics that affect the amount of importance faculty place on HIPs.

Given our goals, this study was guided by the following research questions:

1. How does the importance faculty place on HIPs relate to student participation in those practices?
    a. How does the importance faculty place on a particular HIP relate to student participation in that HIP?
    b. How does the importance faculty place on HIPs in general affect the number of HIPs participated in by first-year students and seniors?
2. What faculty and institutional characteristics predict the importance faculty place on HIPs?

Conceptual Framework

To pursue these questions, we were guided by the same conceptual and empirical underpinnings as Umbach and Wawrzynski (2005) who used the same sources of data to connect faculty practices and values to student experiences and outcomes. Specifically, this paper is framed around the concepts of student engagement, campus culture, and faulty behavior. The diverse theoretical perspectives of student engagement presented by the following researchers in higher education are critical components of this paper because they help define the attributes that lead to enriched educational experiences for students. Two seminal researchers in this area wrote about the role of student behavior within engagement: Pace (1980) described student effort as a key factor in students benefiting from engaging behaviors and Astin (1984) wrote about the benefits of student involvement (i.e., the amount of physical and mental energy a student puts forth when participating in these learning opportunities). Chickering and Gamson (1987)

furthered this dialogue by defining specific principles of student engagement such as student-faculty interaction, active and collaborative learning, and emphasis on high expectations (it should be noted that Kuh, 2008, identified each of these three principles as universal components of HIPs). Tinto (1993) expanded on the environmental components of student engagement by describing how formal or informal, academic or social, opportunities for student integration can lead to increases in student retention. The work of these researchers is helpful in identifying how students benefit through engagement by describing the role of student behavior, listing specific activities, and identifying mediums in which students can integrate.

Many of the attributes associated with student engagement translate to HIPs (Kuh, 2008), particularly the role institutions play in fostering student engagement. Not only are student effort and student involvement important attributes of engagement, but institutions contribute to the level of student engagement on campus by supporting these educational opportunities through an enacted institutional mission, supported by the culture of the campus (Kuh et al., 2005; Pascarella & Terenzini, 1991). Kuh and Whitt (1988) define campus culture as, "the social or normative glue based on shared values and beliefs that holds organizations together" which communicates identity, fosters commitment, increases stability, and incentivizes behavior (p. 10). Using Kuh and Whitt's definition of campus culture, one can understand that values should manifest into organizational identity and translate into individual behavior. In the case of this study, we are testing the assumption that faculty beliefs of the importance of HIPs will translate into student participation in these activities. Faculty, who may be the gatekeepers of HIPs on their campus, can ultimately influence HIP participation among students through their roles as educators outside the classroom and through individual encouragement of students.

However, it is difficult to discern how faculty values translate into faculty behavior when these beliefs compete with other demands on faculty attention. Through the context of Blackburn and Lawrence's (1995) model of faculty productivity, there is a clear connection between faculty values and their behavior. Faculty are receptive to motivations nested within their own interests and commitments, as opposed to only external motivators like promotion, and these motivations serve as key drivers of faculty behavior. These values can be influenced by environmental factors such as institutional mission, faculty resources, and peer behavior. Therefore there is a synergy that occurs between faculty belief and student engagement. By constructing our conceptual framework around the concepts of student engagement, campus culture, and faculty behavior we have established a perspective that illuminates the relationship between student participation in HIPs and faculty value of them.

Study Methods

Data Source

The data for this study come from the 2013 administrations of the National Survey of Student Engagement (NSSE) and Faculty Survey of Student Engagement (FSSE). NSSE was designed to measure the time and energy that students invest in activities that relate to student learning and development. More specifically, NSSE asks students how often they engage in various effective educational practices as well as their perceptions of their college environment and perceived learning gains. FSSE was designed to complement NSSE by measuring faculty perceptions and expectations of undergraduate engagement in educationally purposeful activities, the extent to which faculty promote learning and development in their courses, the extent of faculty interaction with students, and how faculty allocate their time. NSSE 2013 was administered to first-year and senior students at over 620 four-year colleges and universities, and

FSSE 2013 was administered to faculty at 146 institutions. The average response rate for NSSE was 30% (27% for first-year students and 33% for seniors). The overall response rate for FSSE was 43% with an average institutional response rate of 49%.

Sample

The sample for this study consists of responses from nearly 16,300 first-years and 30,000 seniors at 121 institutions that participated in both NSSE and FSSE. About half (46% of first-years and 54% of seniors) of students were first-generation, about three out of fiver (58% of first-years and 60% of seniors) were female, and two-thirds (62% of first-years and 66% of seniors) were White. About one in ten (9% of first-years and 10% of seniors) students were social fraternity or sorority members, less than two in five (23% of first-years and 16% of seniors) were STEM majors, and less than one in ten (11% of first-years and 5% of seniors) were student athletes. Nearly all students (90% of first-years and 74% of seniors) were enrolled full-time, about one quarter (27%) of seniors were taking all of their courses online (only 8% of first-years reported they were), and about half (55%) of seniors were transfer students (13% of first-years were transfers). For more details about select student demographics see Table 1.

Three in five institutions (59%) in this study were privately controlled. Over half of the institutions were either very small (17%) or small (40%) in size. Less or Non-competitive institutions made up nearly two-fifths (38%) of the institutions and a similar proportion were Competitive (39%), with the remaining institutions falling into the Very competitive (12%) or Highly/Most competitive (11%) categories of Barron's selectivity ranking. For more details about institution characteristics see Table 2.

Measures

On NSSE, students indicate whether or not they have participated in a variety of high-impact practices including an internship, learning community, study abroad, a research project with faculty, and a culminating senior experience. Additionally, students are asked how many of their courses have included a service-learning project. These items are examined both at the student-level and aggregated at the institution level, representing the institution's average rate of participation in each high-impact practice. Additionally, various high-impact practices are combined and aggregated at the institution-level representing the average number of high-impact practices that students participated in at that institution. For first-year students, the combined measure includes participation in a learning community, service-learning, or undergraduate research during the first year. For seniors this includes participation in a learning community, service-learning, undergraduate research, an internship, study abroad, or a culminating senior experience at any time in their undergraduate experience. Internship, study abroad, and culminating senior experience were not used as a part of the first-year measure because first-year students do not reliably have access to these activities and few students participate in these activities before their second year (see Table 3).

On FSSE, faculty indicate how important it is to them that undergraduates at their institutions participate in these same high-impact practices. In this study, these items are aggregated both individually, representing the institution's faculty's average importance placed on participating in an individual high-impact practice, and aggregated as a combined score, representing the institution's faculty's average importance placed on participating in any high-impact practice. The Cronbach's α for this measure is .71.

A variety of student and institution characteristics are used as controls. Institution-level controls include control, size, and selectivity. Student-level controls include first-generation, gender, citizenship, race/ethnicity, age, social fraternity/sorority membership, student athlete, major, taking all courses online, living situation, enrollment status, transfer status, and grades. For more information about how these variables were coded, see Tables 4 and 5.

Analyses

All student analyses were weighted by sex and enrollment status. To answer research question 1.a., we used hierarchical generalized linear modeling (HGLM). HGLM was used because (1) the data consisted of cases (i.e., students) nested within institutions, (2) estimates of institutional-level effects were central to the research questions, and (3) our dependent measures were dichotomous (participated or not) at level 1 (Raudenbush & Bryk, 2002; Thomas & Heck, 2001). We ran models for first-year student participation in learning communities, service-learning, and research with a faculty member and senior participation in the same HIPs as first-years as well as participation in internships/field experiences, study abroad, and culminating senior experiences. Each full model included controls for student characteristics at level 1 and controls for size, institutional control (public or private), and selectivity at level 2. In each model, the key independent variable was the aggregated measure of the importance faculty placed on the HIP being examined. All independent variables at level 1 were grand mean centered before entering the analyses. Missing data were removed through listwise deletion, and there were no outliers present in the data.

To answer research question 1.b., two OLS regressions (one for the first-year student aggregate and one for the senior aggregate) were used to examine the relationship between the aggregated average of faculty-level values representing the institution's faculty's average

importance placed on participating in high-impact practices and the aggregated average of student-level variables representing the average number of high-impact practices students participate in at that institution. For first-year students this included participation in a learning community, service-learning, or undergraduate research. For seniors, this included participation in a learning community, service-learning, undergraduate research, an internship, study abroad, or a culminating experience. Controls included the following institution-level characteristics: control, size, and selectivity.

To answer the second research question, a hierarchical linear model (HLM) was run predicting the overall measure of the importance faculty place on HIPs. HLM was used because (1) the data consisted of cases (i.e., faculty) nested within institutions, (2) estimates of institutional-level effects were central to the research questions, and (3) our dependent measure was continuous (Raudenbush & Bryk, 2002; Thomas & Heck, 2001). Faculty characteristics used at level 1 included gender, race, rank and employment status, and field. Institutional characteristics used at level 2 as controls were the same as in our other models (size, control, and selectivity).

Results

Table 6 provides institution-level descriptive statistics for student participation in HIPs by year. Because mainly upper class students enroll in some HIPs (like study abroad), average institutional first-year student participation was only calculated for three HIPs: participating in a learning community, service-learning, and research with a faculty member. There were two institutions where none of the students reported participating in a learning community; on average, institutions had 14% of students participate in this HIP and the highest participation rate among institutions was 44%. Service-learning was the most highly participated in HIP. The

institutional participation rate in service-learning ranged from 24% to 100% (only one institution had all first-year students report participating in service-learning) and the average institutional participation rate was 58%. The average institutional participation rate for research with a faculty member was the lowest of all three of the HIPs (7%).

For seniors, participation rates were calculated for all six of the HIPs in this study: participating in a learning community, service-learning, research with a faculty member, study abroad, participate in an internship, and enrolling in a senior capstone project. The average institutional participation rate in learning communities was double for seniors (28%) compared to first-year students. For service-learning, the participation rate was only 10% higher at institutions for seniors (68%) and for research with a faculty member, the institutional participation rate for seniors was over four times larger than the participation rate for first-year students (29%). On average, institutions had 14% of their seniors participate in study abroad (some institutions had no seniors who had participated in study abroad, while another had 78% of students participate in study abroad). Institutions had an average rate of 53% for seniors participating in internships and a (close) 54% participation rate for enrolling in a senior capstone project.

Faculty members were asked, “How important is it to you that undergraduates at your institution participate in…?” for each of the six HIPs and they were asked to rate their level of importance on a Likert scale (1 = Not important to 4 = Very important). These individual faculty values were aggregated to their institutional mean. Participation in an internship and enrolling in a senior capstone received the highest average level of importance by institution *(M* = 3.42); whereas service-learning was the least important HIP (*M* = 1.76). See Table 7 for descriptive statistics for each importance question.

Table 8 highlights the relationships between the aggregated measures of the importance faculty placed on a particular HIP and institutional rates of participation in those HIPs (i.e., what is being predicted at level 2) for first-year students and seniors. In all models but one (senior participation in learning communities), the average importance faculty placed on a HIP was significantly related to participation rates at the institution. The effects on learning community participation for first-year students and internship/field experience participation for seniors were moderate in size (B = .467 and B = .491, respectively, $p < .05$), the effect on learning community participation for seniors was small (B = .214, $p > .05$), and the remaining effects were relatively large, ranging from .915 to 1.988 ($p < .001$).

Examining the models for the average number of HIPs first-years and seniors participated in at an institution, there were statistically significant and fairly strong positive relationships with the average importance faculty placed on participating in high-impact practices. In other words, the more important an institution's faculty find participation in high-impact practices to be, the more students participated in high impact practices. This relationship was true for both first-year ($p < .001$, unst. B = .504) and senior ($p = .003$, unstd. B = 1.013) participation in high-impact practices. For more details about these models see Tables 9 and 10.

Our final models indicate that women faculty members, faculty members of color, non-US citizens, and full-time faculty all place greater importance on HIPs that their colleagues, all else being equal. Further, faculty in biological sciences and the health professions (e.g., nursing) tend to place higher importance on HIPs. Institutional differences were all quite small.

Discussion

Prior research demonstrates much about the student characteristics connected to participation in particular HIPs and the outcomes of participation in those HIPs (Astin, 1993;

Astin & Sax, 1998; Brownell & Swaner, 2010; Finley & McNair, 2013; Kuh, 2008; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Kuh & O'Donnell, 2013; Mayhew & Engberg, 2011; Pascarella & Terenzini, 1991, 2005; Webber, Krylow, & Zhang, 2013). The current study is significant because it goes beyond past work and establishes a connection between faculty culture at an institution and student participation in HIPs.

In particular, our results show that, for all HIPs examined, institutions where faculty place greater importance on HIPs (either individually or collectively) show higher levels of participation in HIPs. For example, institutions where faculty place greater importance on learning communities have higher rates of first-year participation in learning communities. Institutions where faculty place greater importance on study abroad have senior classes with greater proportions of students having studied abroad. And, at institutions where faculty place greater importance on HIPs overall, the average first-year student and senior likely have participated in more HIPs than at a similar institution where HIPs are less valued by the faculty.

These results are important, because not all faculty members participate directly in HIPs. However, our findings suggest that even those faculty can play a role in increasing student participation. At institutions where increasing HIP participation is a goal (which seems to be the case at nearly every institution given the attention institutions and organizations like AAC&U are devoting to HIPs), faculty members, whether they participate directly or not, can support a HIP culture by explaining to colleagues and students the importance HIPs can play in an educational experience.

For institutions wanting to increase student participation in HIPs, it is essential to consider resources (e.g., staff, facilities, and money) as well as the differential participation rates and effects of student sub-groups (Finley & McNair, 2013; Wellman & Brusi, 2013), but our

results suggest that attention should also be paid to faculty culture connected to HIPs. With our results showing that women, faculty of color, faculty in certain fields, and other faculty sub-groups more likely to value HIPs, institutions should consider two avenues to changing faculty culture: hiring and faculty development. Given our findings, hiring a more diverse faculty will very likely increase the importance place on HIPs by faculty generally on a campus. However, it seems equally important to find creative ways to reach out to faculty who tend to value HIPs less to persuade them of the value of HIP participation and a HIP culture among the faculty.

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Table 1: Student Demographics by Class Year

Demographic	First-Year Students	Seniors
Taking all courses online	8%	27%
First generation student	46%	54%
Female	58%	60%
International student	8%	5%
Social fraternity or sorority member	9%	10%
Living on campus	65%	16%
Athlete	11%	5%
Full-time enrollment	90%	74%
Transfer students	13%	55%
STEM Major	23%	16%
Grades		
Mostly A's	49%	54%
Mostly B's	42%	41%
Mostly C's	9%	5%
Race/Ethnicity		
Asian	5%	3%
Black or African American	12%	11%
Hispanic or Latino	8%	7%
White	62%	66%
American Indian, Alaska Native, Other, or Multiracial	9%	7%
Prefer not to respond	4%	5%
Average age	21	29

Table 2 Institution-Level Characteristics

Institution-Level Characteristics	
Control	59% Private control
Size (FTE Enrollment)	17% Very small (fewer than 1,000), 40% Small (1,000 to 2,999), 36% Medium (3,000 to 9,999), 8% Large (10,000 or more)
Selectivity (Barrons)	38% Less/Noncompetitive, 39% Competitive, 12% Very competitive, 11% Highly/Most competitive
Aggregate Importance of Participating in High-Impact Practices (FSSE)	Average: 2.81, where 4=Very important, 3=Important, 2= Somewhat important, 1=Not important
Aggregate Student Participation in High-Impact Practices (NSSE)	FY: .74 high-impact practices SR: 1.99 high-impact practices

Table 3: Student-Level Participation in High-Impact Practices by Class Year

	Participation[a]	
High-Impact Practice	First-Year Students	Seniors
Internship	9%	44%
Learning community	14%	23%
Study abroad	3%	12%
Undergraduate research	6%	21%
Culminating experience	3%	41%
Service-learning	55%	62%

[a] Done or in progress

Table 4 Student-Level Variable Information

Student-Level Variable Information		
High-Impact practices	Internship	Done or in progress: An internship, co-op, field experience, student teaching, or clinical placement=1
	Learning community	Done or in progress: A learning community or some other formal program where groups of students take two or more classes together=1
	Study abroad	Done or in progress: A study abroad program=1
	Undergraduate research	Done or in progress: Work with a faculty member on a research project=1
	Culminating experience	A culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)=1
	Service-learning	All, most, or some courses at current institution have included a community-based project (service-learning)=1
Student Demographics	Online status	Students taking all of their courses online=1
	First Generation	Neither parent/person who raise student holds a bachelor's degree=1
	Gender	Female=1
	Citizenship	International student or foreign national=1
	Greek	A member of a social fraternity or sorority=1
	Living situation	Student living in a dorm or other campus housing, fraternity or sorority house=1
	Athlete	A student-athlete on a team sponsored by institution's athletics department=1
	Enrollment status	Institution-reported full-time enrolled student=1
	Transfer status	Student began college at the current institution=1
	Major	Students in a STEM field=1.
	Grades	What have been most of students grades up to now at this institution=1. A=A, A-; B=B+, B, B-; C=C+, C, C- or lower *Dichotomized to Mostly A's or not*
	Race/Ethnicity	In group=1. Asian=Asian and Native Hawaiian or Other Pacific Islander; Black=Black or African American; Latino=Hispanic or Latino; White=White; Other=American Indian, Alaska Native, Other, or Multiracial; PNR=Prefer not to respond *White served as reference group*
	Age	Continuous variable

Table 5 Institution-Level Variable Information

Institution-Level Variable Information	
Control	Private control=1
Size	Continuous, based on total undergraduate enrollment
Selectivity (Barrons)	In group=1. Lessnoncomp=Not available/special, Noncompetitive, Noncompetitive Plus, Less competitive, Less competitive Plus; Competitive= Competitive and Competitive Plus; VeryComp=Very competitive, Very competitive plus; Highlymostcomp=Highly competitive, Highly competitive plus, Most competitive *Competitive left out as reference group*
Aggregate Importance of High-Impact Practice Participation	Aggregated average of faculty-level variables representing the institution's faculty's average importance placed on participating in high-impact practices. Faculty responded 4=Very important, 3=Important, 2=Somewhat important, 1=Not important to 'How important is it to you that undergraduate at your institution do the following before they graduate?' Items included internship, learning community, study abroad, undergraduate research, culminating senior experience, service-learning.
Aggregate Student Participation in High-Impact Practices	Aggregated average of student-level variables representing the average number of high-impact practices in which students have participated. For first-year students this includes participation in a learning community, service-learning, and undergraduate research. For seniors, this includes participation in a learning community, service-learning, undergraduate research, an internship, study abroad, or a culminating experience.

Table 6 Institution-level Descriptive Statistics for Student Participation in HIPs

		Range	Min	Max	Mean	Std. Dev.
First-year	Learning community	44%	0%	44%	14%	8%
	Service-learning	76%	24%	100%	58%	15%
	Undergraduate research	26%	0%	26%	7%	5%
Senior	Learning community	55%	5%	61%	28%	10%
	Service-learning	70%	30%	99%	68%	14%
	Undergraduate research	75%	0%	75%	29%	14%
	Study abroad	78%	0%	78%	14%	15%
	Internship	78%	10%	89%	53%	16%
	Culminating Experience	90%	6%	97%	54%	21%

Table 7 Institution-level Descriptive Statistics for Faculty Importance of HIPs

	Range	Min	Max	Mean	Std. Dev.
Learning community	1.39	1.80	3.19	2.46	0.26
Service-learning	1.08	1.35	2.43	1.76	0.20
Undergraduate Research	1.71	1.78	3.48	2.74	0.28
Study Abroad	2.01	1.20	3.21	2.31	0.37
Internship	1.01	2.91	3.92	3.42	0.19
Culminating Experience	1.33	2.47	3.80	3.42	0.20

Table 8 Level-Two Coefficient for Average Faculty Reported Institutional Importance Placed on a High-Impact Practice Predicting Student Participation in That Practice

High-Impact Practice	First-Year Model	Senior Model
Learning Community	.467*	.214
Service-Learning	1.029***	.936***
Research With Faculty	.948***	.915***
Internship/Field Experience	–	.491*
Study Abroad	–	1.640***
Culminating Experience	–	1.988***

*p<.05, **p<.01, ***p<.001

Note. Level-one controls: gender, enrollment, race/ethnicity, age, first-generation, self-reported grades, transfer, living on campus, greek affiliation, major, international, athlete, distance education; level-two controls: size, sector, selectivity.

Table 9 OLS Regression Coefficients for Average Faculty Reported Importance Placed on High-Impact Practices Predicting Number of First-Year Activities Participated In

	Unst. B	**Std. Error**	**Std. β**	**t**
(Constant)	-.668	.275		-2.426*
Aggregate Importance of HIP Participation	.504	.095	.436	5.329***
Private	.055	.034	.139	1.627
Enrollment Size	-.003	.002	-.102	-1.221
Less/Noncompetitive	-.003	.035	-.006	-.072
Very Competitive	.017	.049	.029	.347
Highly/Most Competitive	-.130	.053	-.209	-2.445*

*p<.05, **p<.01, ***p<.001

Table 10 OLS Regression Coefficients for Average Faculty Reported Importance Placed on High-Impact Practices Predicting Number of Senior Activities Participated In

	Unst. B	Std. Error	Std. β	t
(Constant)	-.423	.865		-.489
Aggregate Importance of HIP Participation	1.013	.298	.242	3.404*
Private	.137	.105	.097	1.303
Enrollment Size	-.027	.008	-.256	-3.505**
Less/Noncompetitive	-.287	.109	-.201	-2.633*
Very Competitive	.448	.153	.213	2.917**
Highly/Most Competitive	.775	.166	.347	4.657***

*p<.05, **p<.01, ***p<.001