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## **International Student Engagement: An Exploration of Student and Faculty Perceptions**

Rong Wang

*Virginia Polytechnic Institute and State University, Virginia, USA*

Allison BrckaLorenz

*Indiana University, Indiana, USA*

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### **ABSTRACT**

*An increasing number of faculty have brought up questions and concerns about supporting international students' academic engagement and success. However, little is known about faculty's approaches to international student engagement and how they may differ from international students' self-reported engagement at four-year institutions. Using data from the National Survey of Student Engagement and Faculty Survey of Student Engagement, both large-scale and multi-institutional datasets, this study explores international student engagement in learning strategies, collaborative learning, and student-faculty interaction as well as international student engagement from the perspectives of faculty and students. Recommendations on supporting international student engagement from an individual faculty level, department level, and institutional level are discussed.*

**Keywords:** comparative study, faculty perspectives, international student perspectives, student engagement

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Colleges and universities in the United States have enrolled a dramatically increasing number of international students pursuing postsecondary degrees, which is an important indicator of internationalization in higher education in the 21st century. According to the 2016 Open Doors Report, the number of international students at colleges and universities in the U.S. reached a

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record high of 1,043,839 in the 2015-16 academic year, which increased 7% from the number in the 2014-15 academic year (974,926) (Institute of International Education, 2016). Among the 20 million students enrolled at U.S. colleges and universities, international students represented nearly 5% of the entire postsecondary population in the 2015-16 academic year, which increased nearly 1% from the previous academic year. Among those international students, 78% were degree seekers. Remarkably, the number of international students has increased by 91% since 2000 (Institute of International Education, 2016).

Among the entire international student enrollment at U.S. campuses in the 2015-16 academic year, students from China, India, Saudi Arabia, and South Korea represented 60% of all international students (China: 32%; India: 16%; Saudi Arabia: 6%; and South Korea: 6%) (Institute of International Education, 2016). The proportion of Chinese international students (CISs) has been the highest among the sub-groups of international students enrolled in U.S. higher education since 2006 (Institute of International Education, 2016). The number of Saudi Arabian students in the U.S. surpassed the number of South Korean students in the 2015-16 academic year moving up to third in the ranking of top places of origin of international students (Institute of International Education, 2016).

It is important for faculty and student advisors who work closely with international students to understand international students' educational experiences in the U.S., such as their engagement. There are some studies focused on international students' engagement in the U.S. (Korobova, 2012; Zhao, Kuh, & Carini, 2005). However, little is known about faculty's perceptions of and contributions to international student engagement, and no studies have examined international student engagement from the perspectives of both students and faculty. Although there are an increasing number of resources and practices that support international students at U.S. colleges and universities (Andrade, 2006; Carroll & Ryan, 2005; Groccia, Alsudairi, & Buskist, 2012; Lee, 2014), faculty and staff have limited resources and practices to refer to when trying to understand the pattern of international student engagement and learn about peer faculty's perceptions of international student engagement, especially in effective learning strategies, collaborative learning, and student-faculty interaction. This study is significant in helping international students and faculty reach mutual understandings about performance and expectations of student engagement. Faculty and staff can utilize these findings to understand international

student engagement and create effective practices to support international student engagement cross-culturally.

This paper begins with a review of scholarly literature about the role of international students in higher education internationalization. Then literature about student engagement in U.S. higher education, specifically about students' effective learning strategies, collaborative learning activities, and student-faculty interactions, will be discussed. Next, the measures, data sources, respondent profiles, and analyses used in this study will be detailed in the methods section. Limitations of this study will also be addressed. After presenting the findings, discussion and implications regarding effective practices in supporting faculty and staff to engage international students will be offered.

## **LITERATURE REVIEW**

### **The Role of International Students in Higher Education Internationalization**

Montgomery (2010) claimed that “internationalization is part of the contextual background to the spread of international students in higher education across the globe” (p.3). Internationalization in higher education has been a key trend in U.S. higher education since the turn of the 21st century. The features of an internationalized campus can be seen from various perspectives, such as internationalized curricula; a growing number of international students, scholars, and faculty; and frequent communication and exchanges with overseas institutions. With an increasingly mobile transnational student population, international students play an active role in enhancing the internationalization and globalization of U.S. higher education (Altbach & Knight, 2007).

International students are considered to be one of the most diverse groups on U.S. college and university campuses, not only because they represent over 220 countries and regions in the world (Institute of International Education, 2016), but also because of their racial and ethnic identifications, nationalities, languages, socioeconomic statuses, religious and cultural backgrounds, and political views (Hanassab, 2006; Spencer-Rodgers, 2001). Beyond contributing over \$30.5 billion to the U.S. economy, international students also contribute international perspectives through academic interactions with faculty and peers, and enhance their departments' academic reputations, rankings, and global connections

(Andrade, 2006; Eland & Thomas, 2013; Institute of International Education, 2016; Lee, 2014). U.S. domestic students, who may not have opportunities to study abroad, may have opportunities to interact with international students both inside and out of the classroom, and these interactions and perspectives can enrich the learning experiences and facilitate the development of abilities in interacting with diverse others for both groups of students (Andrade, 2006; Trice, 2003; McMurtrie, 2011). Additionally, international student engagement is closely relevant to the academic development and cultural sensitivities of U.S. domestic students (Calleja, 2000). Luo and Jamieson-Drake (2013) echoed Calleja's (2000) claim and confirmed the educational benefits of interacting with international students for U.S. students by comparing the skill development of U.S. domestic students who interacted with international students to that of those non-interactive U.S. students. They found that interactive U.S. students had higher levels of engagement in relating to people with diverse racial, national, and religious backgrounds; forming creative ideas; operating computers; and being aware of the significance of science and technology in a society (Luo & Jamieson-Drake, 2013). Additionally, international students are an important component of the student bodies of campuses. The engagement and academic achievement of international students is closely related to their retention and success. Therefore, colleges and universities are responsible for providing international students with equal access to resources as their U.S. students as well as to provide the unique support they need to be successful. The next section discusses a vital factor that influences student academic success—student engagement.

### **Student Engagement**

Student engagement measures the time and effort students spend on participating in academic and co-curricular activities (Kuh, 2003). Students tend to gain more from their collegiate experiences when they devote more time and energy to educationally purposeful activities, such as frequently interacting with diverse others and applying what they have learned to solve real-world problems (Kuh, 2003). The following two sub-sections will discuss college student engagement generally and international student engagement in particular within the U.S.

### ***College Student Engagement in the U.S.***

Student engagement varies greatly among students with different backgrounds. A number of prior studies have examined the engagement of U.S. students (e.g. Kuh, 2001, 2003; Kuh & Hu, 2001; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Kuh, Kinzie, Schuh, & Whitt, 2010; Quaye & Harper, 2014). The engagement of students with diverse or nontraditional backgrounds and experiences has been widely studied, focusing on demographics such as gender identity, racial and ethnic identification, major fields, enrollment status, first-generation status, age, and grade point average (GPA) (e.g. Carini, Kuh, & Klein, 2006; Denson, & Chang, 2009; Harper, Carini, Bridges, & Hayek, 2004; Junco, 2012; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pike & Kuh, 2005). Taking the engagement of first-generation college students as an example, Pike and Kuh (2005) surveyed 3,000 undergraduate students in the U.S. and compared the engagement and intellectual development of first-generation and second-generation college students. Compared to students who had at least one parent who had graduated from college, first-generation students were generally less engaged in college life, insufficiently integrated into diverse college experiences, and perceived their college environment as less supportive (Pike & Kuh, 2005). Among the literature addressing the educational experiences of international students in the U.S., only a small number of studies have specifically explored the engagement of international students (Korobova, 2012; Lee, 2014; Ross & Chen, 2015; Urban & Bierlein Palmer, 2014; Zhao, Kuh, & Carini, 2005).

### ***International Student Engagement in the U.S.***

Compared to U.S. students, international student engagement levels differed by class standing and by different areas of engagement. Zhao, Kuh, and Carini (2005) compared the engagement in academic activities between international students and U.S. students in the U.S. context. They found that compared to U.S. students, international students were more engaged in the areas of academic challenge, student-faculty interaction, and using technology in course activities. Additionally, international students also perceived greater gains in personal and social development and general education outcomes than their U.S. peers. Nonetheless, international students were less engaged in community service and socializing than their U.S. peers (Zhao, Kuh, & Carini, 2005). Korobova (2012) found that international students had higher scores in enriching educational experiences

and supportive campus environment than did U.S. students in their senior year.

Zhao, Kuh, and Carini (2005) also examined the variation of international student engagement by their racial and ethnic identification. Although the data that Zhao, Kuh, and Carini (2005) used did not allow them to identify international students' countries of origin, they used racial and ethnic identification as the proxy for international students' countries of origin and cultural norms. Thus, Zhao, Kuh, and Carini (2005) categorized international students into Asian, White, and Black. They found that Asian international students reported fewer gains in general education and had lower satisfaction with their educational experiences than their Black international peers. Additionally, senior Black international students surpassed their senior White peers in several engagement areas, such as academic challenge, active and collaborative learning, student interactions with faculty, and service learning (Zhao, Kuh, & Carini, 2005). This study will focus on international undergraduate students' engagement in learning strategies, collaborative learning, and student faculty interaction. These forms of engagement are not only teaching practices that are closely related to student learning, but they also reflect students' interactions with salient persons associated with their learning, such as peer students and faculty.

### **Effective Learning Strategies**

Effective learning strategies enable learners to make the best use of their strengths as well as monitor their time, concentration, effort, and comprehension (McKeachie, Pintrich, & Lin, 1985; Riding & Sadler-Smith, 1997). Ormord (2011) claimed that a variety of strategies can be used by students to enhance learning, which ranged from taking notes in class to summarizing information and creating a conducive learning environment. With effective learning strategies, learners are more likely to have a better understanding about an emphasis on mastery or performance goal in class (Ames & Archer, 1988).

Scholars have studied the learning challenges that international college students have encountered in English-speaking countries and how learning strategies employed by international students differ from the ones used by domestic students. Because very few studies have investigated the learning strategies used by international students in the U.S., we presented a study conducted in Australia as an example. Ramsay, Barker, and Jones (1999) investigated the academic adjustment and learning process of 20

international freshmen at an Australian university. They found that those non-Australian students had difficulties in understanding lectures because of their vocabulary or the speed of the lecture. Although non-Australian students believed that they benefited a lot from tutoring, they still felt challenged when tutors spoke too fast or gave limited input (Ramsay et al., 1999). In addition, Ramsay et al. (1999) also observed several differences in learning preferences between non-Australian students and local Australian students. For example, in terms of the significant elements for learning, non-Australian students believed that critical thinking skills and faculty's feedback on writing skills were essential for learning, whereas local Australian students expressed that collaborative learning and peer support were salient to learning. Different perceptions of essential learning skills can lead to different expectations for the support provided by faculty. Therefore, it is important for faculty and student advisors to clearly understand the challenges students have encountered in learning and the current strategies students are employing.

### **Collaborative Learning**

Collaborative learning requires students to interact with peers, which has been shown to have a positive relationship with student gains and satisfaction with college (Astin, 1993). Many scholars have noted that international students do not actively collaborate with U.S. students in learning (e.g. Lee & Rice, 2007; Yuan, 2011). Based on a qualitative study with 24 international students from over 15 countries, Lee and Rice (2007) asserted that worrying about English proficiency, international students who studied in the U.S. often felt uncomfortable participating in group-work or interacting with peer classmates. That is why many international students prefer collaborating only with peers from the same country or those who share similar cultural backgrounds (Sarkodie-Mensah, 1998).

### **Student-Faculty Interaction**

Several studies have examined the impact of student-faculty interaction on student development and learning outcomes (Kuh & Hu, 2001; Kuh et al, 2006; Pascarella & Terenzini, 1991; Umbach & Wawrzynski, 2005). Kezar and Moriarty (2000) found that student-faculty interaction is positively associated with a wide range of student outcomes, such as students' self-assessed leadership abilities and social self-confidence. Faculty members play an essential role in influencing student

learning both in and out of the classroom (Umbach & Wawrzynski, 2005). Through interviews with two international students enrolled in the U.S., Tseng and Newton (2002) found international students' relationship with their instructors and advisors was important to their learning. Additionally, a good relationship effectively helped international students achieve their goals and promote professional development (Tseng & Newton, 2002). Umbach and Wawrzynski (2005) advocated that if faculty employed collaborative teaching and learning methods, and if they tended to value the behavior of respecting students and challenging them academically, students were more likely to have higher levels of engagement and learning outcomes. Chickering (1969) argued that students' sense of purpose would be enhanced as the frequency of student-faculty interaction increased, regardless of whether the interaction was formal or informal. The literature above all supports the important role of faculty in enhancing students' academic achievement and supporting their success.

Several scholars examined the beneficial effects of student-faculty interaction among students with diverse backgrounds. Lundberg and Schreiner (2004) investigated the relationship between student-faculty interaction and student learning. They found that compared to students' background characteristics, students' relationships with faculty act as strong predictors of learning. Those predictors were strongest for students of color (Lundberg & Schreiner, 2004). In addition, Anaya and Cole (2001) examined the impact of student-faculty interaction on college students' academic achievement among Latina/o students, and found that student-faculty interaction, both academic interactions and personal interactions, and students' perceived quality of relationships with faculty were positively associated with Latina/o students' college grades. Sax, Bryant, and Harper (2005) compared the different effects of student-faculty interaction between college men and women from several perspectives, such as gender differences in frequencies of interacting with faculty and the impact of involvement with faculty. One of the interesting findings was that female students reported more frequent and more positive interactions with faculty than their male counterparts did in general. However, male students reported more frequent interaction with faculty than female students in the following aspects: talking about better grades with faculty outside of class, stronger interests in science and arts, and a higher-level sense of competitiveness (Sax, Bryant, & Harper, 2005). Kezar and Moriarty (2000) also claimed that student-faculty interaction had a positive association with self-rated public

speaking ability of male students and perceptions of capacity to influence others for female students.

Not all studies support the positive effects of student-faculty interaction on all students. Pascarella and Terenzini (1991) claimed that pure social exchange between students and faculty does not affect students' learning outcomes unless they involve intellectual or substantial interactions. More to the point, Endo and Harpel (1982) found that student-faculty interaction, regardless of formal or informal, did not have a significant impact on students' academic achievement as measured by college GPA. Kuh (2003) also discussed the appropriate amount of interactions with faculty being considered as enough interactions. He highlighted that more interactions may not necessarily equal better interactions between students and faculty (Kuh, 2003). The essential and substantial factor of the quality of interactions relies on the nature and frequency of contact (Kuh, 2003). In other words, student-faculty interaction will not matter most to student learning unless "it encourages students to devote greater effort to other educationally purposeful activities during college" (Kuh, 2003, p. 29).

### **Engaging International Students**

Several studies have examined faculty experiences in engaging international students and have recommended strategies to faculty for supporting international students (Carroll & Ryan, 2005; Groccia, Alsudairi, & Buskist, 2012; Lee, 2014). For example, Carlin (2010) discussed internationalizing faculty's scholarly experiences and suggested including more international content and issues in the curricular design. Interviewed about faculty members' attitudes and approaches toward graduate international students in the U.S., Trice (2003) found that some faculty observed a significant difference in language obstacles and culture adjustment between international and domestic graduate students, whereas other faculty observed few differences. Although our study focused on the engagement of undergraduate international students, we believe that there are common themes in faculty's approaches to international student engagement on a group level, regardless of students' class standings.

Scholars have also discussed different opinions on whether to use social learning groups among international students (Gillett & Baskerville, 2012; McFadden, 2014). Tinto (2003) advocated that by creating an environment of learning groups among adult learners that everyone served

as learning resources for each other. However, Gillett and Baskerville (2012) argued that Tinto's social learning approach was not applicable among Asian adult learners. Using a mixed method study to examine the learning preferences of 273 undergraduate students majoring in accounting in the United Kingdom, Australia, and New Zealand, Gillett and Baskerville (2012) found that social group learning was not valued among some international students. McFadden (2014) brought up the question of whether international students' dislike of social group learning should be respected as a cultural influence or whether should faculty encourage international students to interact with native English speakers. Such questions have led to ongoing debates among scholars and practitioners in the field of higher education.

Helping international students understand culture in the United States will contribute to promoting international student engagement and enhancing their learning (Yuan, 2011). Yuan (2011) interviewed a faculty member who taught Chinese students at an U.S. university. She found that understanding culture in the U.S. helped students develop a sense of belonging in class, which helped students "participate more, engage more, and learn more" (Yuan, 2011, p. 148). Additionally, making international students understand the culture of an U.S. college classroom also helped them clarify the expectations of their professors. For example, students are expected to express their thoughts and propose questions freely, whereas being quiet in class can be considered as incompetent and inattentive in the U.S. (Yuan, 2011). However, being quiet in class would be perceived as a sign of good self-discipline and respecting teachers in Asian countries, like China (Yuan, 2011). Yuan's (2011) findings are applicable to a large group of international students from non-English speaking countries who are studying in the U.S. Therefore, it is very necessary and important that faculty and staff assist international students in understanding the culture in U.S. society and academic life.

### **Gaps in the Literature**

Several gaps exist in the literature are presented here. First, among the current literature about international students' educational experiences and learning preferences, more studies are needed about international students' learning preferences and engagement in the U.S. context. Higher education in the U.S. has its own unique characteristics, such as a highly diverse student body and the U.S. culture embedded in the campus

environment. Second, among the scholarly literature focused on international student experiences in the U.S., many studies have examined their adjustment, acculturation, language barriers, or financial burden (e.g. Banjong, 2015; Ladd & Ruby, 1999; Lee & Rice, 2007; Rajapaksa & Dundes, 2002; Valdez, 2015), but little is known about international student engagement in the U.S. context. More and more scholars and practitioners in the U.S. have realized the significance of supporting international student engagement, but they have insufficient resources. Third, among the available studies that examined international student engagement in the U.S., only a small number have employed quantitative approaches (Korobova, 2012; Zhao, Kuh, & Carini, 2005). Fourth, prior studies have examined faculty's experiences and opinions on international students' learning (Trice, 2003; Yuan, 2011), but the literature has been neglected in the extent to which and how faculty are engaging international students, especially in effective learning strategies, collaborative learning, and student-faculty interaction. No prior studies have paralleled faculty's behaviors in engaging international students with international students' self-reported engagement.

### **Research Questions**

- How do faculty teaching practices for international students vary by faculty and course characteristics?
- To what extent are students engaged at institutions where faculty more frequently engage international students?
- To what extent are international students engaged at institutions where faculty more frequently engage international students?

## **METHODS**

### **Data Source**

The data source for our study came from the 2016 administrations of the National Survey of Student Engagement (NSSE) and Faculty Survey of Student Engagement (FSSE). The administration of both NSSE and FSSE is a collaborative effort between NSSE/FSSE staff and NSSE/FSSE participating schools over a 12-month time span (FSSE, n.d.; NSSE, 2016). NSSE asks students how often they engage in various effective educational practices, their perceptions of their college environment, and how they

**Table 1.** Select Teaching International Students Experimental Items and Scale Information

Select Items:	Scale information:
Earlier, you answered some questions based on one particular undergraduate course section that you are teaching or have taught during this academic year. Thinking again about that course, please respond to the following items.	
2. During the current school year, about how often have you done each of the following with <i>international students</i> you teach or advise? <i>Response options: Very often, Often, Sometimes, Never</i>	These items make up the TIS_SF scale. Min: 0 Max: 60 Mean: 28.51 SD: 15.96 $\alpha$ : .868
a. Talked about their career plans	
b. Worked on activities other than coursework (committees, student groups, etc.)	
c. Discussed course topics, ideas, or concepts outside of class	
d. Discussed their academic performance	
5. In your selected course section, how much do you encourage <i>international students</i> to do the following? <i>Response options: Very much, Quite a bit, Some, Very little</i>	These items make up the TIS_CL scale. Min: 0 Max: 60 Mean: 31.72 SD: 18.29 $\alpha$ : .892
a. Ask other students for help understanding course material	
b. Explain course material to other students	
c. Prepare for exams by discussing or working through course material with other students	
d. Work with other students on course projects or assignments	These items make up the TIS_LS scale. Min: 0 Max: 60 Mean: 35.20 SD: 18.20 $\alpha$ : .866
e. Identify key information from reading assignments	
f. Review notes after class	
g. Summarize what has been learned from class or from course materials	

spend their time in and out of the classroom. Since launched in 2000, more than 1,600 bachelor's granting institutions in the U.S. and Canada have participated in NSSE (NSSE, 2016). In 2016, NSSE was administered to 311,086 first-year and senior students at 530 U.S. four-year colleges and universities (NSSE, 2016). NSSE participating institutions provided NSSE with a population data file including all first-year and senior students, from which NSSE selected a census or random sample and then sent survey invitations and reminder messages (NSSE, n.d.). The average response rate for U.S. institutions participating the 2016 NSSE was 29% (NSSE, 2016). Complementing NSSE, FSSE focuses on the nature and frequency of student-faculty interaction, faculty emphasis on educational practices that

are empirically linked with student learning and development, faculty values for institutional support and high-impact practice participation, and how faculty organize their time both in and out of the classroom. All faculty respondents were selected by their own institutions that participate in FSSE (FSSE, 2016). In FSSE 2016, over 14,500 faculty responded from 119 bachelor's-granting colleges and universities in the U.S. and Canada. A brief item set focusing on faculty perceptions of and contributions to the engagement of international students was appended to FSSE 2016 at 14 institutions, yielding 844 faculty responses. The complete wording of items examined from this Teaching International Students (TIS) experimental item set can be found in Table 1.

### **Description of Respondents**

Eight hundred and forty-four faculty responded to the FSSE 2016 TIS experimental items (Table 1). The largest proportions of these faculty had faculty appointments in Arts and Humanities (21%); Physical Sciences, Mathematics, and Computer Sciences (14%); and Business (13%). Around a quarter of faculty (27%) were full Professors, with smaller proportions being Associate Professors (20%), Assistant Professors (22%), full-time Lecturers/Instructors (22%), and part-time Lecturers/Instructors (10%). Slightly over half (51%) identified as men, and two in five (41%) identified as women. Nearly three-quarters (70%) identified as White, with smaller proportions identifying as Asian, Native Hawaiian, or Other Pacific Islander (6%); Black or African American (5%); Hispanic or Latino (3%); or American Indian, Alaska Native, other, or multiracial (5%). Around two in five (43%) faculty selected a lower-division course to respond to questions whereas half (50%) of faculty selecting an upper-division course. Most (84%) selected a course taught in a traditional classroom format on campus. See Table 2 for more faculty respondent details.

The student respondents in this study consisted of 5,682 first-years and seniors at the 14 institutions where faculty responded to the TIS experimental item set. Around 4% ( $n = 188$ ) of these students were international students. The largest proportions of students overall were in Business (23%); Health Professions (16%); and Biological Sciences, Agriculture, and Natural Resources (10%) majors. Around two-thirds of students (64%) aspired to a graduate degree. The largest proportions of students were White (69%) or Black/African American (10%).

Table 2. Select Faculty and Course Characteristics (n = 844)

		Percentage (%)
Disciplinary area	Arts & Humanities	21.1
	Biological Sciences, Agriculture, & Natural Resources	7.6
	Physical Sciences, Mathematics, & Computer Sciences	13.7
	Social Sciences	12.5
	Business	13.3
	Communications, Media, & Public Relations	3.1
	Education	4.7
	Engineering	6.1
	Health Professions	8.1
	Social Service Professions	1.9
	Other disciplines	7.8
STEM field	No	71.6
	Yes	28.4
Academic rank	Full Professor	26.6
	Associate Professor	19.9
	Assistant Professor	21.8
	Full-time Lecturer/Instructor	21.6
	Part-time Lecturer/Instructor	10.1
Gender identity	Man	51.0
	Woman	41.0
	I prefer not to respond	8.0
U.S. citizen	No	3.5
	Yes	96.5
Racial/ethnic identification	Asian, Native Hawaiian, or Other Pacific Islander	5.9
	Black or African American	5.2
	Hispanic or Latino	3.2
	White	69.9
	American Indian, Alaska Native, Other, Multiracial	4.8
	I prefer not to respond	11.0
Course division	Lower division	43.2
	Upper division	50.1
	Other	6.7
Course format	Classroom instruction on-campus	84.0
	Other course format (classroom at an auxiliary location, distance education, or combination of classroom instruction and distance education)	16.1

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Nearly half of students (45%) lived on campus or were considered first-generation students (47%). Around 61% of students identified as women, and 49% of respondents have earned mostly A grades. Most students (80%) were of traditional age, 23 or younger. More student-respondent details by class level and international student status can be found in Table 3.

*Table 3. Select Student Characteristics by International Student (IS) Status and Class*

		First-Year (%)		Senior (%)		Total (%)		
		Non-IS	IS	Non-IS	IS	Non-IS	IS	
Major field	Arts & Humanities	5.3	1.1	5.6	3.3	5.5	2.2	
	Biological Sciences, Agriculture, & Natural Resources	9.5	6.5	10.2	5.6	9.9	6.0	
	Physical Sciences, Mathematics, & Computer Science	5.6	5.4	3.4	4.4	4.2	4.9	
	Social Sciences	7.6	6.5	9.5	12.2	8.8	9.3	
	Business	21.8	40.9	21.5	45.6	21.6	43.2	
	Communications, Media, & Public Relations	2.0	1.1	2.7	4.4	2.4	2.7	
	Education	9.5	6.5	10.1	1.1	9.9	3.8	
	Engineering	8.3	17.2	6.6	12.2	7.2	14.8	
	Health Professions	15.3	5.4	16.9	6.7	16.3	6.0	
	Social Service Professions	6.1	2.2	6.7	< 1	6.5	1.1	
	All Other	4.5	2.2	6.5	4.4	5.7	3.3	
	Undecided, undeclared	4.5	5.4	< 1	< 1	2.0	2.7	
	Educational aspirations	Some college/university	5.9	9.6	6.1	4.3	6.0	7.0
		Bachelor's degree	34.8	13.8	28.0	18.5	30.6	16.1
Master's degree		38.1	54.3	44.2	45.7	41.9	50.0	
Doctoral or professional degree		21.2	22.3	21.7	31.5	21.5	26.9	
Racial/ethnic	American Indian or	< 1	1.1	< 1	< 1	< 1	< 1	

		First-Year (%)		Senior (%)		Total (%)		
		Non- -IS	IS	Non- -IS	IS	Non- -IS	IS	
identification	Alaska Native							
	Asian	3.0	28.7	2.2	24.2	2.5	26.5	
	Black or African American	8.4	16.0	10.5	16.5	9.7	16.2	
	Hispanic or Latino	7.9	16.0	6.4	15.4	7.0	15.7	
	Native Hawaiian or Other Pacific Islander	< 1	< 1	< 1	< 1	< 1	< 1	
	White	70.6	20.2	71.8	16.5	71.4	18.4	
	Other	< 1	8.5	< 1	13.2	< 1	10.8	
	Multiracial	6.4	5.3	4.6	7.7	5.3	6.5	
	I prefer not to respond	2.1	4.3	2.8	6.6	2.5	5.4	
	Living on campus	No	24.2	33.7	74.3	71.4	55.2	52.2
		Yes	75.8	66.3	25.7	28.6	44.8	47.8
First-generation	No	58.3	66.3	49.4	76.1	52.8	71.1	
	Yes	41.7	33.7	50.6	23.9	47.2	28.9	
Gender identity	Man	38.6	44.8	35.5	56.5	36.7	50.5	
	Woman	60.1	51.0	62.8	42.4	61.8	46.8	
	Another gender identity	< 1	2.1	< 1	< 1	< 1	1.1	
	Prefer not to respond	< 1	2.1	1.2	1.1	1.0	1.6	
Grades	Mostly A grades	49.1	45.3	49.1	51.1	49.1	48.1	
	Mostly B grades	42.3	51.6	44.0	43.5	43.4	47.6	
	Mostly C grades or lower	8.6	3.2	6.8	5.4	7.5	4.3	
Age	19 or younger	90.3	65.3	< 1	2.2	34.7	34.4	
	20-23	5.4	29.5	68.8	70.3	44.6	49.5	
	24-29	1.4	5.3	13.8	22.0	9.1	13.4	
	30-39	1.5	< 1	8.7	4.4	6.0	2.2	
	40-55	1.4	< 1	6.9	1.1	4.8	< 1	
	Over 55	< 1	< 1	1.4	< 1	< 1	< 1	

**Measures**

From FSSE, a selection of questions from the FSSE core survey, including demographics and course characteristics, in addition to the items

in the TIS experimental item set were included in this study. The demographic items examined included faculty's disciplinary appointment, academic rank, gender identity, citizenship status, and racial/ethnic identification. The course characteristics examined here included course division (upper and lower division) and course format (teaching in a traditional classroom on campus versus formats such as distance education). The items from the TIS experimental item set focused on the frequency of faculty interactions with international students outside of courses (where frequency is measured in the vague quantifiers "Very often," "Often," "Sometimes," or "Never") and how much faculty encouraged international students to use effective learning strategies and collaborate with their peers ("Very much," "Quite a bit," "Some," "Very little"). Thus, three scales were created by averaging a group of items that measure the same construct based on exploratory factor analysis: Student-Faculty Interaction (TIS\_SF, Cronbach's  $\alpha = .868$ ), Learning Strategies (TIS\_LS, Cronbach's  $\alpha = .866$ ), and Collaborative Learning (TIS\_CL, Cronbach's  $\alpha = .892$ ). See more details about the three scales in Table 1.

From NSSE, student demographics included in this study are citizenship status, major field, educational aspirations, racial/ethnic identification, living situation, transfer status, first-year or senior class, first-generation status, gender identity, estimated grade point average, and age. Additional measures on NSSE parallel those on the FSSE TIS item set, asking students how often they interact with their faculty outside of courses (Student-Faculty Interaction, SF), how much they collaborate with peers (Collaborative Learning, CL), and how much they use effective learning strategies (Learning Strategies, LS). Information about these NSSE measures, three of NSSE's ten Engagement Indicators, can be found on the NSSE website [nsse.indiana.edu](http://nsse.indiana.edu).

### **Analysis**

To answer the first research question (RQ) about how faculty teaching practices for international students vary by faculty and course characteristics, a series of Ordinary Least Squares (OLS) regression equations were examined. The dependent variables were those three TIS scales. The independent variables included were disciplinary area (entered as a STEM versus non-STEM field), gender identity, citizenship, racial/ethnic identification, course format, course division, and academic rank.

To answer the second RQ about the extent to which students are engaged at institutions where faculty more frequently engage international students, another series of OLS regression equations were examined. The FSSE TIS measures were aggregated to the institution level and entered into student regression models as an independent variable acting as an institution-level measure of faculty support for international students. The dependent variable in these models were the NSSE Engagement Indicators listed above, SF, CL, and LS. Other independent variables used as controls were student major, degree aspirations, racial/ethnic identification, living situation, transfer status, class level, first-generation status, gender identity, estimated grades, and age. To answer the third RQ about the extent to which international students are engaged at institutions where faculty more frequently engage international students, a series of similar models were run as those in the second RQ with the exception that the students examined were limited to international students.

### **Limitations**

Several limitations exist for this study. Institutions elected to participate in NSSE and FSSE, which means that participating institutions were not randomly selected from institutions in the U.S. and Canada. Additionally, institutions that elected to participate in FSSE were able to select their own participation sample, so results may not be generalizable to all faculty in all types of institutions. The experimental item set which served as the focus for this study was only administered to a small selection of institutions participating in FSSE for one time in 2016, and institutions were allowed to elect not to have their faculty respond to this item set. Additionally, experimental item sets were administered at the end of the FSSE survey, which may result in the loss of some participants due to the length of the entire survey. Also, faculty participants were asked to select one course they were teaching during the current school year to respond to most FSSE survey items. It is possible that these results are therefore not generalizable to all courses. Finally, although faculty and students were matched at the institution-level in this study, there was not a direct connection between students and faculty in particular courses. Results from this study should be considered valid for a selection of institutions, students, faculty, and courses and any attempts to generalize this information should be made with caution.

Table 4. OLS Regression Coefficients for FSSE Student-Faculty Interaction Scale

		Student-Faculty Interaction (TIS_SF)			
		B	SE	$\beta$	Sig.
	(Constant)	23.165	5.065		***
Disciplinary Area	STEM field	-2.931	1.629	-.081	
Gender identity	Woman	.233	1.520	.007	
<i>Man as reference</i>	Prefer not to respond	.222	3.415	.004	
Racial/ethnic identification	Asian and Native HI or other PI	12.49	3.130	.196	***
<i>White as reference</i>	Black/African American	13.343	3.207	.179	***
	Hispanic/Latino	9.401	3.960	.103	*
	American Indian AK Native, Other, or Multiracial	3.077	3.026	.044	
	I prefer not to respond	6.001	2.879	.114	*
Course format	Classroom format	-.865	1.897	-.020	
Course division	Upper division	1.677	1.515	.051	
<i>Lower as reference</i>	Other	5.103	2.828	.082	
Academic rank	Associate Professor	1.545	2.047	.038	
<i>Full professor as reference</i>	Assistant Professor	3.747	2.068	.096	
	FT	1.393	2.082	.035	
	Lecturer/Instructor				
	PT	-3.011	2.732	-.052	
	Lecturer/Instructor				
Citizenship	U.S. citizen	1.718	4.256	.020	

## RESULTS

### How Do Faculty Teaching Practices for International Students Vary by Faculty and Course Characteristics?

Very few faculty characteristics predicted faculty engagement of international students. Although faculty in STEM fields encouraged international students to collaborate with their peers more than faculty in non-STEM fields ( $B = 3.459, p < .05$ ), the remaining predictors of

engagement of international students revolved around faculty’s racial/ethnic identification. Asian and Native Hawaiian or other Pacific Islander faculty ( $B = 12.498, p < .001$ ) and Black or African American faculty ( $B = 13.343, p < .001$ ) participated in more Student-Faculty Interaction with international students. These same faculty encouraged more Collaborative Learning activities for international students than their White colleagues. Hispanic or Latino faculty ( $B = 9.401, p < .05$ ) and faculty who prefer not to respond about their racial/ethnic identification ( $B = 6.001, p < .05$ ) interacted more with international students outside of courses. See Table 4, Table 5, and Table 6 for more details.

*Table 5.* OLS Regression Coefficients for FSSE Collaborative Learning Scale

		Collaborative Learning (TIS CL)			
		B	SE	$\beta$	Sig.
	(Constant)	35.048	5.203		***
Disciplinary Area	STEM field	3.459	1.658	.085	*
Gender identity	Woman	1.349	1.565	.036	
<i>Man as reference</i>	Prefer not to respond	3.050	3.638	.045	
Racial/ethnic identification	Asian and Native HI or other PI	6.828	3.320	.091	*
<i>White as reference</i>	Black/African American	9.791	3.343	.115	**
	Hispanic/Latino	.646	4.219	.006	
	American Indian AK Native, Other, or Multiracial	-.300	3.363	-.004	
	I prefer not to respond	.722	3.191	.012	
Course format	Classroom format	1.318	2.007	.026	
Course division	Upper division	1.383	1.562	.037	
<i>Lower as reference</i>	Other	-.758	2.935	-.011	
Academic rank	Associate Professor	-1.277	2.159	-.028	
<i>Full professor as reference</i>	Assistant Professor	.835	2.181	.019	
	FT Lecturer/Instructor	-2.141	2.163	-.049	
	PT Lecturer/Instructor	.116	2.771	.002	
Citizenship	U.S. citizen	-7.392	4.447	-.073	

(Asian:  $B = 6.828, p < .01$ ; Black:  $B = 9.791, p < .01$ ) and effective Learning Strategies (Asian:  $B = 11.919, p < .001$ ; Black:  $B = 9.718, p < .01$ )

**Table 6. OLS Regression Coefficients for FSSE Learning Strategies Scale**

		Learning Strategies (TIS_LS)			
		B	SE	$\beta$	Sig
	(Constant)	40.006	5.223		***
Disciplinary Area	STEM field	-1.292	1.615	-.032	
Gender identity	Woman	1.448	1.528	.039	
<i>Man as reference</i>	Prefer not to respond	1.575	3.507	.023	
Racial/ethnic identification	Asian and Native HI or other PI	11.919	3.220	.165	***
<i>White as reference</i>	Black/African American	9.718	3.275	.116	**
	Hispanic/Latino	.180	4.024	.002	
	American Indian AK Native, Other, or Multiracial	1.100	3.207	.013	
	I prefer not to respond	1.387	3.073	.023	
Course format	Classroom format	.282	1.935	.006	
Course division	Upper division	.952	1.516	.026	
<i>Lower as reference</i>	Other	-.640	2.869	-.009	
Academic rank	Associate Professor	-3.176	2.102	-.071	
<i>Full professor as reference</i>	Assistant Professor	1.080	2.133	.024	
	FT Lecturer/Instructor	-.866	2.112	-.020	
	PT Lecturer/Instructor	-.563	2.700	-.009	
Citizenship	U.S. citizen	-6.465	4.525	-.063	

**To What Extent Are Students Engaged at Institutions Where Faculty More Actively Engage International Students in the Classroom?**

At institutions where faculty more frequently engaged with international students outside the classroom, all students benefited from higher levels of Student-Faculty Interaction ( $B = .318, p < .001$ ). Similarly, at institutions where faculty more frequently encouraged international students to use effective Learning Strategies, all students benefited from an increase in such engagement ( $B = .461, p < .001$ ). Adversely, at institutions

where faculty more frequently encouraged international students to collaborate with their peers, there was not a significant or notable increase in students' Collaborative Learning. See Table 7 for details.

*Table 7.* OLS Regression Coefficients for Aggregate Faculty Engagement of International Students for International Students and Students Overall

	All Students				International Students			
	B	S.E.	$\beta$	Sig.	B	S.E.	$\beta$	Sig.
Student-Faculty Interaction	.318	.060	.091	***	.675	.288	.190	*
Collaborative Learning	.050	.064	.013		.215	.330	.053	
Learning Strategies	.461	.072	.113	***	.095	.366	.022	

Note: Control variables include student major field, educational aspirations, racial/ethnic identification, living situation, transfer status, class level, first-generation status, gender identity, estimated GPA, and age. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### **To What Extent Are International Students Engaged at Institutions Where Faculty More Actively Engage International Students in the Classroom?**

At institutions where faculty more frequently engaged with international students outside of the classroom, international students benefited from higher levels of Student-Faculty Interaction ( $B = .675$ ,  $p < .05$ ). Unfortunately, at institutions where faculty more frequently encouraged international students to use effective learning strategies and to collaborate with their peers, there was not a significant or notable increase in international students' Learning Strategies and Collaborative Learning scores. See Table 7 for more details.

## **DISCUSSION**

The characteristics of faculty who engage international students in effective learning strategies, collaborative learning, and student-faculty interaction found in this study are aligned with the characteristics of faculty who engage all students in those three aspects found in Nelson Laird, Lambert, Cogswell, and Ribera's (2014) study. These researchers found that African

American and Hispanic and Latino faculty emphasized more effective learning strategies and collaborative learning activities and engaged more in student-faculty interaction than their White colleagues; Asian faculty emphasized more effective learning strategies. It is possible that these ethnic minority faculty were more active in engaging international students because they were active in engaging all students in effective learning strategies, collaborative learning, and student-faculty interaction in general. Future studies could take a step further to examine why this is the case. Our findings may help institutions to examine faculty teaching practices on their own campuses and recognize faculty who actively engage international students. Institutions can also identify faculty who may need to improve their efforts in engaging international students and help them understand the significance of engaging international students.

Our findings confirm the significance of faculty support in engaging international students. At institutions where faculty more frequently engage with international students, not only do international students, but all students benefit, especially in student-faculty interaction. Lee (2014) indicated that some international students were often mistaken for U.S. students of color. Thus, they were often marginalized, discriminated, and invisible on campus. Cress (2008) found that students of color, women, and gay/lesbian students were more likely to perceive isolation and discrimination inside and out of their classroom. However, a strong student-faculty relationship mitigated the unwelcoming and negative campus climate. This study affirms Cress's (2008) study that a strong student-faculty interaction will contribute to enhancing international students' sense of belonging and promoting an inclusive learning environment not only for international students, but all students. Cress (2008) believed "if students are respected as individuals, rather than 'treated like numbers,' students' connections with faculty will be enhanced and ultimately so will their educational development" (p. 108).

Our findings indicated that at institutions where faculty more frequently encouraged international students to take part in collaborative learning activities, there was not a notable increase in either overall students' or international students' collaborative learning. Faculty encouragement alone may not be enough for increasing students' engagement in collaborative learning activities. Instructors may consider requiring some amount of collaboration amongst students. Faculty should re-examine the strategies they employ to encourage students to learn

collaboratively. Additionally, we found that at institutions where faculty more frequently encouraged international students in effective learning strategies, there was not a significant increase in international students' effective learning strategies. This could be because international students already actively employ effective learning strategies. Taking Chinese international students (CISs), the most represented international student group in the U.S., as an example, both first-year and senior CISs used more effective learning strategies than their U.S. peers at U.S. colleges and universities (Wang, 2017). Future studies could further explore the reasons why faculty's emphasis on effective learning strategies and collaborative learning had insignificant impact on increasing international students' effective learning strategies and collaborative learning.

This study will not only add a helpful piece to current literature regarding international students' engagement in the U.S. at four-year institutions, but also has practical value for faculty, student advisors, international educators, and international students themselves. This study parallels international students' engagement with faculty's behaviors in engaging international students, which will help international students and faculty to reach mutual understandings about student engagement. Additionally, faculty and student advisors can utilize the findings of this study to understand international students' engagement in effective learning strategies, collaborative learning, and student-faculty interaction, and create effective practices to support international students' engagement cross-culturally as well as provide the sufficient resources they need. For example, being aware of the benefits of higher levels of student-faculty interaction for international students, faculty and student advisors could proactively reach out to international students to understand the factors that encourage or hinder students' interaction with faculty. Accordingly, faculty and student advisors could create or participate in programs and events, such as faculty-student mentorships and faculty-student socials, to enhance student-faculty interaction.

Furthermore, this study will add an important piece to the scholarly literature regarding international students' educational experiences in U.S. higher education. The findings and implications of this study may be generalized and transferable to study international students' engagement in countries and regions with similar educational contexts and teaching practices. Those countries and regions may face similar questions about enrolling a growing number of international students and supporting

international students' engagement. Although there might be cultural differences among those countries or regions, this study will create fundamental conversations among scholars and practitioners on supporting international students in different countries. This study will also facilitate cross-national collaborations in helping international students' success in higher education.

## **IMPLICATIONS**

### **Implications for Practice**

To encourage more faculty to engage with international students, institutions and departments should provide sufficient resources for faculty to achieve such goals. As it is shown in our findings, faculty of color, such as Asian faculty, Black or African American faculty, and Hispanic or Latino faculty engaged their international students more actively. We recommend that institutions and departments include faculty support for international students in evaluation or consider supporting international students as an essential criterion in promotion.

New faculty orientations, faculty learning communities, faculty reading groups, and teaching workshops are all great opportunities to bring faculty together to exchange ideas and concerns about engaging international students. Faculty could share ideas and practices about understanding the significance of engaging international students in courses, and learn about strategies for creating an engaging and inclusive classroom environment for all students. Some effective strategies that faculty can apply to create an inclusive classroom environment are role playing, small group activities, and team projects. In regard to facilitating group work, we recommend that faculty consider requiring some amount of collaboration amongst students and using instructor-assigned teams instead of students' self-selected groups to avoid several disadvantages. With student self-selected groups, students with strong abilities or pre-existing friendships are more likely to team up together; under-represented minorities, such as female students in STEM fields, will be potentially isolated (Deibel, 2005). In student self-selected groups, international students may also be more likely to choose to work with other international students. We additionally recommend that faculty use peer evaluations in collaborative learning activities to encourage the team to hold each other accountable.

Additionally, institutions and departments could also initiate programs that bring faculty and student affairs professionals together to support international students. Several institutions have living-learning communities with global or international themes, such as the Global Village in the International Living Learning Center at Oregon State University (Oregon State University, n.d.) and the Global Village Living-Learning Center at Indiana University Bloomington (Indiana University, n.d.). With supportive faculty and staff, those living learning communities provide a friendly platform for international and domestic students who have strong interests in cultural exchange and global experiences.

### **Implications for Research**

The variation in effective learning strategies, collaborative learning, and student-faculty interaction within international student subgroups is an important consideration in future studies of international students. Due to the limited sample for international students from specific countries and regions in this study, we were not able to break down international students into subgroups for analysis. If other studies are unable to attain a sufficient number of international students from particular countries or cultures, studies should still acknowledge the variety of subcultures and do what they can to create sensible groupings of students. Future studies could add a qualitative approach, such as focus groups or semi-structured interviews, to explore more information about the variation in engagement among international students from different countries and regions.

Additionally, as it was discussed in the method section, faculty and students were matched at the institution-level in this study. Future studies could distribute our survey items among faculty and international students enrolled in their courses. Then we believe our understandings about international student engagement from the perspectives of both students and faculty will be more comprehensive based on a direct connection in particular courses.

Furthermore, if a longitudinal dataset is available in the future, we will be able to track the changes of international student engagement from their first-year to senior experiences in U.S. colleges and universities. We would also be able to compare the changes of international student engagement with the changes of faculty's perspectives of international student engagement. In another study examining faculty's perceptions of, contributions to, and challenges in engaging international students in their

courses, we found that the lower the proportion of international students enrolled in a faculty member's course, the more faculty reported they had challenges in teaching international students (Wang & BrckaLorenz, 2016). Based on that finding, we believe that the more international students that faculty have taught, the more comfortable they may feel in supporting international students and establishing connections with them. With a longitudinal dataset, we would be able to examine the relationship between the number of international students that faculty have taught as time goes by and the challenges that faculty members have encountered or perceived in teaching international students.

### **CONCLUSION**

International students are an important component of the student population in U.S. higher education institutions. Colleges and universities have responsibilities and should make efforts to serve, retain, and graduate them (Byrd, 1991). Faculty approaches and behaviors in connecting with international students will be beneficial to the engagement of international students and students overall, especially in student-faculty interaction. At the same time, faculty may also benefit from the engagement of international students, such as enhancing intercultural communication skills and promoting cultural awareness. Institutions and departments should provide sufficient resources and support to faculty and staff to engage international students and to create an inclusive and welcoming learning environment for all students.

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**RONG WANG**, PhD, is the Assistant Director of Academic Strategy and Policy at Virginia Polytechnic Institute and State University. She obtained her Ph.D. in the Higher Education and Student Affairs program at Indiana University. She worked as a Research Project Associate at the Center for Postsecondary Research during her doctoral study. Her research interests include college teaching, learning, student engagement, and international comparative education. Email: wangrong@iu.edu

**ALLISON BRCKALORENZ**, PhD, is a research analyst for the Center for Postsecondary Research and the project manager for the Faculty Survey of Student Engagement. Her research interests include the teaching and learning of college students and the accompanying issues faced by faculty as well as faculty and graduate student professional development and the experiences of LGBTQ students and faculty. Email: abreckalo@indiana.edu

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