

THREE ESSAYS ON ASSIMILATION AND ACCULTURATION OF  
INTERNATIONAL INSTRUCTORS AT U.S. RESEARCH UNIVERSITIES

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At the University of Missouri – Columbia

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In partial fulfillment of  
The Requirement for the Degree  
Doctor of Philosophy

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By  
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The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled

THREE ESSAYS ON ASSIMILATION AND ACCULTURATION OF  
INTERNATIONAL INSTRUCTORS AT U.S. RESEARCH UNIVERSITIES

presented by Trang Pham

a candidate for the degree of Doctor of Philosophy,

and hereby certify that, in their opinion, it is worthy of acceptance.

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ABSTRACT

This dissertation consists of three chapters that answer an overarching question: “How do foreign-born instructors assimilate and acculturate into U.S. academia as an immigrant-receiving environment?” Across the three chapters, quantitative and qualitative data were collected and analyzed to study the situations of international instructors and understand their changes in behavioral patterns over time using different immigration theories. In the first chapter, using grading as a marker of assimilation, I examine the gap in grading behaviors between international and domestic instructors and how the gap changes over time. The second chapter studies the cultural determinants of the grading gap between international and domestic instructors, anchoring on home country characteristics as pre-migration factors. The third chapter broadens the theoretical basis of acculturation theory to explore the stories behind the behaviors of international graduate instructors as they start their teaching, as well as the acculturation of their instructor identity, in a U.S. public university.

## **Chapter 1. Introduction**

### **Context and rationale**

U.S. higher education is an immigrant-receiving environment. Since 2012, U.S. institutions of higher education have received over 1 million international students annually (IIE, 2019), over 1,000 doctorate-holders (NSF, 2018) and 2,000-3,000 H1B visa holders (USCIS, 2019). During the 2017-2018 academic year alone, there were about 135,000 international scholars working or engaging in academic activities at a U.S. college or university, representing an increase of 71 percent since 2000 (IIE, 2019). Roughly 20% of the teaching workforce in higher education is foreign-born (Mamiseishvili & Rosser, 2010).

It is now a critical time to study foreign-born workers and their integration into academic work environments. Repeated studies, though not taking immigration perspectives, point to the facts that foreign-born academics are more productive (Corley & Sabharwal, 2007), yet less satisfied at work (Mamiseishvili, 2011; Mamiseishvili & Lee, 2018), and have higher intent-to-leave their current institutions or academia entirely (Kim et al., 2012, 2013) than their domestic counterparts. Marvasti (2005) argues that many issues faced by foreign-born faculty are due to the informal institution embedded in academia. Perceptions such as foreign-born faculty does not speak English well, prefer to work on research over teaching, adversely affects the immigrants' prospective promotion and retention (Marvasti, 2005). Networking and the hidden curricula of postsecondary education in the U.S. can be missed by foreign-born faculty but influence their careers in meaningful ways (Giroux & Penna, 1979; Margolis, 2001). Overall, the literature signals

forms of assimilative stresses among immigrant academics, but little is known about this group and their integration from the immigration perspectives.

### **This study**

This dissertation begins to fill this gap in the literature. It consists of three chapters that answer an overarching question: “How do foreign-born instructors assimilate and acculturate into U.S. academia as an immigrant-receiving environment?” Applying the two important theories from the literature on immigration—assimilation and acculturation—I collected both quantitative and qualitative data to unpack the current situations of international instructors in different Research-1 universities and understand their behaviors, and changes to their behaviors, over time. The dissertation proceeds as follows:

In the second chapter, I examine how assimilation is revealed among immigrant academics teaching in the U.S. academic environment. I focus specifically on whether international instructors exhibit assimilative behaviors with respect to their grading practices over time. Using a unique dataset of over 2,700 randomly selected instructors and a research design that accounts for the disproportionate representation of international faculty across fields, I show that international faculty assign lower grades than domestic faculty, on average. Moreover, I document a modest divergent trend in grading practices for international faculty relative to domestic faculty over time. I conclude that there is no evidence of assimilation among international faculty as measured by their grading practices. This finding indicates that immigrant academics maintain aspects of diversity in the higher education workforce. It also suggests their assimilation struggles should be taken into consideration in faculty evaluations.



The third chapter examines the extent to which home-country characteristics determine post-migration behavior among immigrant academics in the U.S., specifically, their grading practices. My analysis is based on a unique dataset of over 2,000 instructors in three Research-I universities that I use to test if international instructors' grading behaviors are predicted by four home-country characteristics: (1) influence of America abroad; (2) quality of home country schooling system; (3) level of academic freedom in the home country, and (4) wait-time for rewards in home countries. I find that influence of America and wait-time for rewards are significant determinants of grading behaviors among international instructors in the U.S. independently. However, a factor analysis reveals that all four of these factors are closely intertwined. After constructing a combined index of all four of these cultural measures using factor analysis, I show that immigrants from countries that are more culturally similar to the U.S. are more lenient graders compared to those from countries with index values indicating greater cultural distance from the United States.

The fourth chapter explores the development of the instructor identity among international graduate instructors (IGIs) working at, and acculturating into, a public university in the United States. Using a new conceptual framework which combines the concepts of identity and acculturation strategies, and employs narrative inquiry as methodology, I present the narratives of nine Asian IGIs as they told the stories of their instructor identity development during their acculturation. The characteristics of the instructors who adopt each acculturation strategy – i.e., marginalization, separation, assimilation, and integration – are described through their stories of student-instructor interactions, both in and out of the classroom. Their stories provide a rich context to

understand the mindset of Asian IGIs as they embark upon their teaching journeys, and the cross-cultural differences that they may encounter. The role of the context of reception (e.g., different departments or fields) in the acculturation process of IGIs is also discussed.

Together, the three chapters call for attention of higher education administrators on cultural awareness in diversity and inclusion policy. The persistent behavioral gap between international and domestic instructors suggests struggles to integrate among international faculty. Faculty evaluation criteria, when not accounting for such underlying factors, may not provide an accurate picture of the ability and contributions of foreign-born instructors. Their struggles to integrate go beyond race or gender, as even when studied within one ethnic/racial group, assimilation and acculturation are revealed in different ways. This study, then, calls for more cultural awareness in diversity policy beyond race- and gender-based inclusion.

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**Chapter 2. Do immigrant academics assimilate? Evidence from Grading behaviors of International Faculty at U.S. universities**

## **Introduction**

This paper seeks to understand the assimilation of international instructors into U.S. academia as an immigrant-receiving environment. The assimilation process, by which immigrant groups and host societies interact and influence each other (Brown & Bean, 2006), has been widely studied among immigrant students or high-skilled immigrants. However, in the U.S. higher education context, the assimilation of international faculty still receives limited attention.

Meanwhile the international workforce in U.S. academia has been growing for decades. In the academic year 2017/2018, there were 135,000 international scholars working or engaging in academic activities at a U.S. college or university, representing an increase of 71 percent since 2000.<sup>1</sup> Their skills supplement domestic market demand for instructors and researchers in STEM (Science, Technology, Engineering and Math) fields in particular (Z. Lin et al., 2009). They add more diversity into the higher education workforce and contribute to the attraction of international students to U.S. universities. Most higher education institutions have developed strategies specifically for hiring immigrant academics to advance human capital (Slaughter, 2014).

Using national survey data, prior research identifies certain patterns of international faculty with regard to workplace, research productivity, job satisfaction, mobility and promotion. In particular, international instructors are more likely to work at research universities than other types of academic institutions (Marvasti, 2005). They prefer working on research rather than teaching or service and are more research-productive than their domestic colleagues (Kim et al., 2011). They have lower job

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<sup>1</sup> <https://opendoorsdata.org/data/international-scholars/all-places-of-origin/>

satisfaction than domestic faculty (Corley & Sabharwal, 2007; Mamiseishvili & Lee, 2018). Foreign-born faculty are less likely to work in administrative positions (Kim et al., 2020) and have lower intention to stay in their current institutions (Kim et al., 2013). These patterns are aligned with the characteristics of high-skilled immigrant groups, who are known to differ from their native counterparts across important occupational dimensions, such as job choice, English fluency, and income (Chiswick & Taengnoi, 2007; Kerr et al., 2015; Ma, 2020). Beyond these statistics that compare immigrant with domestic academics, little is known about the former's assimilation to work in U.S. academia.

To further the understanding of immigrant academics, this paper extends the literature by using grading practices as an outcome variable to measure instructor behavior and assimilation. I track the grades that instructors assign over time to document patterns of assimilation among international faculty in comparison with the grading behavior of domestic faculty. Trained in a different culture, international instructors must adjust to the grading norms and pedagogy in the U.S. both at the structural level (i.e., how the grades are distributed) and interpretational level (i.e., how the grades are understood by students and their colleagues) (Haug, 1997; Kim et al., 2011). Indeed, international faculty do grade differently on average. Below I show that there is a statistically significant and modestly sized difference in class-average grades awarded between international and domestic instructors (about 0.14 standard deviations of the course-grade distribution).

My empirical analysis of assimilation is based on a unique, self-constructed dataset of over 2,700 instructors who taught at least one undergraduate course at one of

three public, research universities over a seven-year period from 2011-2017. My primary definition of an “international instructor” identifies instructors as international if they received their undergraduate training (B.A. degrees) in a country other than the U.S. (following Kim et al., 2011).<sup>2</sup> Where countries of undergraduate degrees are not available, I apply other techniques to identify each instructor’s international status. I also consider the potential implications of measurement error from my identification processes in the empirical models.

I find that the difference in average grades assigned by international and domestic instructors exists consistently at different career stages and there is no evidence that it diminishes as instructors gain more experience. If anything, the evidence points toward a slight divergence in grades assigned by international instructors as they become senior.

This paper proceeds as follows. I begin by reviewing the related literatures on the uses of grades in international higher education and explain the way grading practices can be used to measure assimilation. Next, I present my data construction process and data description. Then, I use a department-fixed-effects research design to identify the relationship between grading practices and instructor international status, conditional on important factors such as work time in U.S. academia. After presenting my findings, I conclude the paper with a discussion on its contributions in terms of data novelty, theory and policy implications for university leaders.

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<sup>2</sup> The Open Doors Reports categorize students with F visas as “international students” and J visas as “international scholars.” For tax purposes, the Internal Revenue Service (IRS) categorizes them as “aliens.” The National Study of Postsecondary Faculty (NSOPF) and the Survey of Doctorate Recipients address faculty from different countries as “foreign-born” and “non-resident,” respectively. Kim et al. (2011) proposed using countries of B.A. degrees to identify international status to address the problem of underreporting when using citizenship data.

## **Grading as marker of assimilation**

Assimilation is the process by which immigrant groups and host societies interact and come to resemble one another in their characteristics (Brown & Bean, 2006), which can be economic or sociocultural.<sup>3</sup> To study the sociocultural aspect of assimilation, researchers observe certain behavioral changes in immigrants, such as intermarital status (Gullickson, 2006), naming their children (Abramitzky et al., 2020), home cuisine, carpool to work (Cutler et al., 2008). In the academic context, grading behaviors are culturally embedded and can serve as a marker of assimilation for the following reasons.

First, at the structural level, different grading scales are used in different countries. For example, in France and Francophone Belgium, grades are assigned on a 20-point scale. In the United Kingdom and countries under its influence, students are given grades in percentage points and are categorized into a class system (i.e., first-class honor, upper second-class honor, lower second-class, etc.). Some countries in Asia and South America maintain a 10-point scale system and have descriptive categories for students' performance (e.g., "excellent," "outstanding," "satisfactory") rather than letter grades.<sup>4</sup> To address the differences in countries' grading systems, study abroad programs have some tools to translate grades obtained from another countries, such as the ECTS (European Credit Transfer System) or the U.S. Credit Transfer System for Study Abroad, but these tools are far from comprehensive (Haug, 1997). Such grade conversion tools are

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<sup>3</sup> Economic assimilation is usually measured by income. Excessive literature uses the term "assimilation" to imply "economic assimilation" when studying immigrants' earnings and the time they need to receive equal earnings as their domestic peers. See: Abramitzky et al., 2014; Edin et al., 2000; Friedberg, 2000; among others.

<sup>4</sup> Database of grading system <http://www.cimea.it/en/services/publications-and-databases/databases/cimea-mac-laude.aspx>



not always helpful assisting international instructors to adjust their grading decisions to match with their host institutions' grading norms.

Second, the ways instructors adjust their grading behaviors depend on their fields, disciplines, institutions, and instructors' personal experiences (Haug, 1997). Regarding the latter, international instructors are trained in a particular cultural system that defines a grade number or letter with differing standards (Witte, 2011). For example, 15/20 is a good grade in France, but converting into German system, it is 2.5, which means mediocre (Haug, 1997). 71 is classified as "First class" in Britain but in the U.S., 71 is in the C range. To the best of my knowledge, no study has sought to understand how international instructors adjust their behaviors when they teach and work abroad.<sup>5</sup>

Third, any adjustments that international instructors actively make with their grading practices are important signals of their behavioral changes to adapt to the new grading norm. Grading is subjective as it reflects both tasks' criteria and individuals' standards (Wyatt-Smith, 1999). Grading also shows how instructors seek to be part of the in-group faculty at the department (Orr, 2007). When grading, and depending on the course content, instructors often make holistic rather than analytical judgements (Bloxham et al., 2011). Written, published criteria are not always followed strictly by instructors (Bloxham et al., 2011).<sup>6</sup> When working in the U.S. academic environment with a different grading system and philosophy, instructors need to make adjustments in

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<sup>5</sup> Borjas (2000) compares grades earned by undergraduate students who worked with domestic teaching assistants (TAs) and those who worked with foreign-born TAs in Economic Principles classes. He finds that foreign-born TAs have adverse impact on class performance of undergraduate students of about 0.2 grade points. The research focuses on student performance and does not probe for the changes in behaviors of the TAs or graders. However, it suggests there may be a grade gap between students who work with domestic instructors versus foreign-born instructors.

<sup>6</sup> More discussion on criterion- versus standard-based assessment and training in Sadler (1987, 2005).

their grade decisions. These adjustments require personal judgements, which may well be influenced by their values and preferences from the previous cultural backgrounds.

Grading practices, therefore, are suitable as a marker of assimilation because they reflect the change in behaviors that instructors actively make over time at work.

Extensive research has found that students' grades are predicted by subject fields (Butcher et al., 2014; Hermanowicz & Woodring, 2019; Koedel, 2011), types of institutions (Putman et al., 2014), class size (Kokkelenberg et al., 2008), class level (Bean, 1985), teaching effectiveness (Eiszler, 2002), and gender (Jewell & McPherson, 2012). Cultural background of the instructor is another dimension along which it is reasonable to hypothesize that differences in grading practices exist.

Arguably, the changes in immigrant academics' grading behavior over time can go in either of the two directions. Following assimilation accounts, as international instructors interact with domestic colleagues and students, the former would gradually converge in grading behaviors of the latter. However, in the case that cross-cultural interactions may be low in academic environment (Freeman & Huang, 2015), there are chances that instructors would not change their behavior and keep their grading standards (D. N. Figlio & Lucas, 2004; Jewell et al., 2013). My results are consistent with the second explanation.

### **Data**

My analysis is based on a longitudinal panel dataset I constructed that includes 2,789 randomly selected university instructors from three public research-I universities in the United States. In total, the instructors in my sample taught 22,449 undergraduate

courses at three universities over a span of 21 semesters for which I collected data (or 7 academic years, noting that summer is treated as a separate semester in the data).

The panel dataset has two components. The first is the course-grade data from three universities-Indiana University, University of Missouri and Michigan State University-spanning courses offered during all semesters between 2011 and 2017, inclusively (hereafter: grade dataset). The three universities are a convenience sample in that they were selected because they post their course-grade data online. The grade dataset has information on class-average grades, the full distribution of grades (percent A's, B's, C's, etc.), class levels, student enrollment, departments, semesters, and class instructors' full names.

The second source is a unique dataset with information on instructors' qualifications and demographics (hereafter: instructor dataset). Using instructors' full names from the grade dataset, I conducted a manual search through instructors' curricula vitae and websites to obtain important variables, such as the countries of their bachelor's degrees and early employment.

I was able to scrape the grade dataset from the web at relatively minimal time cost. However, the construction of the instructor dataset was more time intensive because it required manual data collection. It was not feasible to build a dataset of all instructors at the three focal universities. In order to determine how large of a dataset I would need, I performed an *ad hoc* power calculation on the grade dataset to identify the sample size required to detect a grading gap of at least 10 percent of a standard deviation of the class-average grade. This calculation suggested a sample size of roughly 3,000 instructors would be sufficient, so I developed a random sampling strategy among all instructors

targeting this number. The final analytic sample is slightly below 3,000 (per above, it is 2,789) because some instructors could not be found during the manual search process and were dropped. Details about the construction of the data panel are available in Appendix A-1.

This panel dataset addresses several data problems in the current literature on international instructors. First, existing studies, which focus on the research productivity and job satisfaction of international faculty (e.g., Corley & Sabharwal, 2007; Kim et al., 2011, 2012; Mamiseishvili, 2010; Mamiseishvili & Lee, 2018; Marvasti, 2005), use data from four national surveys. While designed to be representative, these data are subject to potential non-response bias.<sup>7</sup> For instance, the decision of a faculty member to participate in a survey on job satisfaction could arguably be correlated with their job satisfaction and pay. These personal decisions to participate in a survey vary in terms of race, gender and earnings, and they can bias the analytical results (Bethlehem, 2010; Bollinger et al., 2019; Fox et al., 2019).<sup>8</sup> My data is built with a pre-analysis of administrative data, which alleviates the participant self-selection issue.

### **Measures and coding rules**

This section describes the key elements of the combined dataset and coding rules.

*Grades:* The key outcome of interest is the class-average grade. The class-average grade is the mean value of all students' grades in one class, measured on a 4.0-point scale and rounded to the hundredth decimal place. Alternatively, the percentage of students

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<sup>7</sup> The National Study of Postsecondary Faculty survey (NSOPF); the biennial Survey of Doctorate Recipients (SDR); the annual Survey of Earned Doctorates (SED); and the COACHE surveys (2008, 2009 and 2014).

<sup>8</sup> To my knowledge, there are only two papers that address the self-selection issue of survey data. Corley and Sabharwal (2007) constructed a homogeneous but smaller sample; and Kim et al. (2011) used sampling weight.

receiving each letter grade is used as outcomes in a supplementary analysis (Table B-12). Aggregated grades were similarly used in prior research to examine departments' grading practices (Butcher et al., 2014)

*Instructors' international status:* I collected the instructors' countries of origin to construct the key variable of interest: *international status* (i.e., a binary variable taking a value of 1 if one is international, and 0 otherwise). Information on international status came mainly from instructors' online profiles that reported their countries of bachelor's degree attainments. For example, if an instructor reported that they received their bachelor's degree from China, they would be coded as *international*, and China would be their country of origin. Eighty percent of the instructors in the sample have their international status coded based on the country from which they received their bachelor's degree, which I describe as "tier-1 information."<sup>9</sup>

I also attempted to recover information about international status from the remaining 20 percent of the sample, using what I describe as "tier-2" and "tier-3" information. Tier-2 information is based on whether an instructor had clear research interests in a specific country and bore a common name of that country. For example, an instructor named Paganini who published several papers on political infrastructure in Italy would be coded as *international* and assigned Italy as the country of origin. International status assignments based on tier-2 information account for 14% of all instructors. If tier-2 information was also not available, I relied on instructors' last names or the languages they speak (tier-3 information). For instance, if I could not find any

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<sup>9</sup> Forty-three instructors who appear to be foreign-born (by their names or first language) but with B.A. degrees from a U.S. institution are coded as domestic. In these instances, the use of the term "domestic" means that the instructor received postsecondary training in the U.S. I have also confirmed my results are robust to dropping these ambiguous cases from the sample.

information about an instructor to suggest a nationality, and the instructor had the last name of Smith or Johnson, they would be coded as American (i.e., *domestic*) and the U.S. as their country of origin. Six percent of the instructors were coded based on tier-3 information.

The main model, presented in the following section, includes instructors coded based on all three tiers of information. My findings remain qualitatively similar if I conduct my analysis using only instructors with tier-1 information. The inclusion of the latter two tiers increases my sample size but also increases attenuation bias due to measurement error—empirically, my results suggest that these two factors roughly cancel out, and I get similar results regardless of how I subset the data based on the information tier.<sup>10</sup>

*Work time in U.S. academia:* I measure the time an instructor worked in U.S. academia from the time they received the highest degree (usually Ph.D.) until the current semester. *Time since the highest degree* is measured in semester units. One year comprises three semesters. In cases where the faculty profile does not indicate the year of the highest degree, I measure *work time in U.S. academia* by the time since the instructor's first registered publication on their online profile or on Scopus. Using this method across different sources, I obtain a value for *work time in U.S. academia* for 97% of the faculty-semester observations. Following this coding system, the value of work time in U.S. academia for graduate students is 0.

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<sup>10</sup> I quantified the scope for inaccuracies in the dataset by having another rater recode the country-of-origin variable using my 3-tiered process for 300 randomly selected instructors. The inter-rater reliability is 98% (i.e., there were 6 inconsistencies out of 300). This suggests limited measurement error in terms of rater coding, although the implied degree of measurement error is a lower bound because both raters followed the same imperfect process.

This method formally assumes that instructors start working in a U.S. academic job as soon as they graduate. The reason I need to make this assumption is that I do not observe instructors' work experience before 2011. A consistent way for me to measure instructors' work time in U.S. academia is from the graduation year, which I can recover for almost all instructors. This likely induces additional measurement error in my estimates of U.S. academic work time. Any such measurement error should increase attenuation bias, which means the assimilation trends will be biased toward zero, if anything.

*Instructor qualifications:* Instructor qualification measures include their ranks and the prestige of their Ph.D.-granting institutions. Regarding ranks, I collected the highest level of reported job titles when they worked at the universities in my sample and assigned them into nine categories.<sup>11</sup> Regarding degree prestige, I collected the Ph.D.-granting institutions of 96% of the faculty members in the sample. Based on their university ranking in the *2018 U.S. News & World Report*, I grouped faculty members into three categories, which are institutions ranked in top 50; not in top 50, and non-ranked institutions. The latter includes instructors who received their Ph.D. from abroad and those who did not earn a doctoral degree. Graduate instructors did not have their doctoral degrees when they taught and graded classes. Therefore, they do not have values for the prestige of their Ph.D.-granting institutions.

*Other controls:* To account for instructor heterogeneity along other dimensions, I manually collected demographic control variables including instructors' race and gender

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<sup>11</sup> Namely: graduate instructor; instructor/lecturer/adjunct; visiting/post-doctoral fellow; other non-tenured instructors; assistant professor; associate professor; full professor; emeritus and other unknown ranks. Instructor ranks are used as a variable because they are correlated with work time. Refer to Ginther & Hayes (1999) for more discussion on modelling ranks.

designations. I relied on visual inspections of instructors' pictures that could be found online to classify individuals into five racial/ethnic groups (White, Black, Asian, Hispanic, and other race) and three gender groups (male, female, and unknown gender).<sup>12</sup> With regard to class characteristics, I include class enrollment and class levels as control variables because they are known to predict students' grades (Bean, 1985; Kokkelenberg et al., 2008).

### **Data description**

Table 1 and Table 2 present the descriptive statistics of the final sample. Table 1 shows the sample by instructor and Table 2 by course (at the semester level). Both tables report the statistics of the full sample and the faculty sample (with no graduate instructors). Graduate instructors are modeled separately.<sup>13</sup>

Column 1 in Table 1 examines the characteristics of all instructors sampled for this study. The majority of faculty are domestic (80%), white (68%), and male (54%). Graduate instructors account for nearly a third of the teaching workforce (26%). Tenure and tenure track professors, including emeritus, outnumber non-tenure track instructors. Columns 2 and 3 compare the composition of the full sample by international status and show three differences. First, demographically, Asian instructors are overrepresented among the international group while white instructors are overrepresented in the domestic group. Second, international instructors are disproportionately found to have tenure or a

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<sup>12</sup> Conceptually, it might be argued that this method confounds race as biological, gender as sex (Laughter, 2018), I contend that in the U.S. context, where race is a social construct, this method also presents the social understanding of racial groups rather than a representation of self (Leonardo, 2007). The same argument is applied for gender groups. My sample shares the same representation of race and gender with descriptive statistics of 1) the 2014 IPEDS sample of Research-I universities and 2) the previous study by Li and Koedel (2017). My inter-rater reliabilities for *race* and *gender* are 95% and 98%, respectively.

<sup>13</sup> Results on the graduate instructors are in Table B-11.



tenure-track position. Third, international instructors are more likely to receive a doctorate from another country. Regarding the faculty sample in column 4, the summary statistics are largely the same as in the full sample.

In Table 2, besides demographics, I report instructors' work time in U.S. academia (measured since their Ph.D. completion) and the workload distribution. The average instructor in my sample received their Ph.D. 14 to 16 years prior to the time of the teaching observation. In terms of teaching load, graduate instructors teach only 13% of the courses. The rest is divided between tenure and tenure track (48%) and non-tenure track (38%) instructors. It is also shown in Table 2 that international instructors are responsible for about 17% of the undergraduate teaching load while accounting for 20% of the sample, which is consistent with past research on the emphasis of international faculty on research (Mamiseishvili & Rosser, 2010).

### *International instructors and their countries of origin*

Tables 3 shows the distribution of international faculty by country of origin. International instructors in my dataset come from 80 different countries. Asian instructors are overrepresented, and Chinese is the largest international group. Other countries with high representation are India and South Korea. These numbers align with statistics from SED (2017) reporting that Asia is the largest demographic group of non-resident doctorate earners; and China, India and South Korea are the top-3 countries of origin of international doctoral recipients.<sup>14</sup>

Table 4 shows the countries from which instructors receive their degrees. Besides the United States, scholars also received their terminal degrees from 21 other countries,

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<sup>14</sup> <https://www.iie.org/Research-and-Insights/Open-Doors/Data/International-Scholars/Places-of-Origin>

led by Great Britain and Canada. Those who received their graduate degrees from abroad are primarily international instructors (88 out of 99).

The last columns in Table 3 and Table 4 provide a general idea about scholars' work time in U.S. academia when they are observed in my dataset. British nationals and British-trained academics outnumber those from other countries and also work longer in U.S. academia. Those from Italy, Canada and Israel are also more experienced than Asian peers, even though they are lesser in number. Most individuals with a non-U.S. degree belong to the old European generation who have been in U.S. academia for longer. This trend among international instructors mirrors the demographics of immigrant waves into the United States: The old generation of immigrants who came in during the early and mid-20<sup>th</sup> century are more likely to be from Europe, whereas toward the end of the century until today, the new generation is more likely Asian or Latinx (Feliciano & Lanuza, 2016).

A concern raised by Table 3 is that the composition of immigrants could affect my estimates of assimilative behavior because time in the U.S. is correlated with geographic origin. I directly test for compositional bias by estimating separate assimilation trends by origin and find no evidence of compositional bias. Details are provided below.<sup>15</sup>

### ***International instructors and their fields of discipline***

Table 5 shows the proportion of international instructors in selected departments, which reveals that international instructors are distributed unevenly across departments. This is important because their departmental placements may influence grading norms.

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<sup>15</sup> See Table B-1 for a breakdown of countries of origin by work time below and above median.

As can be seen, STEM and some selected social science departments hire more international instructors than others, and the pattern coincides with documented differences in grading (Butcher et al., 2014). Therefore, it is necessary for my analytic strategy to account for department heterogeneity and its influence on grades (my key outcome variable).

### **Model**

Using a department-fixed-effects research design, I examine whether international instructors assimilate into U.S. academia as measured by their grading practices relative to domestic instructors in the same departments. The specification I use is:

$$Y_{ijkt} = \beta_0 + \beta_1 I_i + \beta_2 T_{it} + \beta_3 X'_i + \beta_4 (I_i * T_{it}) + \beta_5 S'_{ijkt} + \gamma_j + \theta_t + \mu_{ijkt} \quad (1)$$

In equation (1),  $Y_{ijkt}$  is the class-average grade given by instructor  $i$  for class  $k$  in department  $j$  in semester  $t$ , measured on a 4.0-point scale.  $I_i$  is the key variable of interest that identifies the international status of instructor  $i$ . As mentioned above, international status is measured with the variable *international* (a binary variable taking a value of 1 if one is international, and 0 otherwise).  $T_{it}$  is instructor  $i$ 's *work time in U.S. academia* in semester  $t$ , measured in semesters and then divided by 100 for presentational convenience.<sup>16</sup>

$X'_i$  is a vector of demographic and educational background controls for instructor  $i$ , including race, gender, and the prestige of the Ph.D.-granting institution.<sup>17</sup>  $S'_{ijkt}$  is a vector of class controls including enrollment and the class level. Class enrollment is measured by the number of students taking class  $k$  in semester  $t$ . The class level variable

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<sup>16</sup> Dividing the work time period by 100 helps to prevent small coefficients.

<sup>17</sup> Correlation coefficients of races and international status are not significant, indicating that race and international status are not correlated. The same model without variables of race yields similar results in terms of direction and statistical significance.

captures whether class  $k$  is introductory (for courses targeted at freshman-level students), intermediate (for courses targeted at sophomores) or advanced (for courses targeted at juniors and seniors).  $\beta_0$  is the intercept.  $\gamma_j$  is a department fixed effect and  $\theta_t$  is a semester fixed effect.  $\mu_{ijkt}$  is the error term. Standard errors are clustered at the department level throughout, appropriately allowing for data dependence in class grades within departments.<sup>18</sup>

In this model, the coefficient  $\beta_1$  captures the difference between the grades given by international instructors and those given by domestic instructors, or the international-domestic grade gap. The interaction term of *international* and *work time in U.S. academia* measures the change in the grade gap on a semester-by-semester basis, or the rate of assimilation. Its coefficient,  $\beta_4$ , indicates how much grades deviate between the group for every 100 semesters of experience. If assimilative behavior is observed,  $\beta_1$  and  $\beta_4$  will be signed in opposite directions. The rate of assimilation may be too small to be captured on a semester-by-semester basis, so I also examine trends over broader categories of experience.

My preferred specification is with the full set of control variables and department and semester fixed effects. It would be desirable to test the relationship with a class fixed effect or a class-level-by-department fixed effect (to account for heterogeneity across classes within a department). However, the dataset is built based on a power calculation with a department fixed effects only and I lose statistical power when including these more detailed fixed effects. In Table B-3, I provide results of tests using the other fixed-

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<sup>18</sup> The department-level clustering follows the typical protocol of clustering at the most aggregate feasible level, which is conservative (Cameron & Miller, 2015). Robustness tests of standard errors clustering at the instructor level in Table B-13 show stronger results.

effect specifications, showing that the signs of the main estimates hold, but they are no longer significant.

The research design is built on two assumptions. First, class assignments are not statistically different between domestic and international instructors within a department. This assumption is plausible as departmental teaching plans are usually fixed semesters or years in advance. However, there is a possibility that students select themselves into classes taught by domestic or international instructors when enrolling due to their own preferences. Due to a lack of data availability, I am not able to test for a self-selection behavior among students and this remains as a caveat to my findings.

The second assumption stems from my reliance on cross-sectional differences in experience in the U.S. to identify the assimilation coefficient. Noting again that the home-country composition of international instructors is changing over time, this requires that international instructors from different countries exhibit similar assimilative behaviors. Unfortunately, I do not have enough data to test for heterogeneity on a country-by-country basis, but I am able to test for *regional* heterogeneity to gain some insight into the potential for bias from the changing composition of immigrants. Specifically, I estimate an augmented version of equation (1) that allows for heterogeneity in the assimilative parameter by area of origin, where the areas are *United States*, *Asia*, *Europe*, and *Other*.

## **Results**

### ***Differences in international-domestic grading practices***

Column 1 of Table 6 shows that international instructors, on average, assign grades that are 0.13 points lower ( $p < 0.01$ ) than domestic instructors on a 4.0-point scale

(or 28 percent of a standard deviation). The grade gap ( $\beta_1$ ) in the first four columns of Table 6 hovers around 0.13 points on the 4-point scale as I add basic control information. In column 5, incorporating department fixed effects into the model reduces the magnitude of the international-domestic grade gap by about half, to 0.07 points ( $p < 0.05$ ). The decline in the coefficient reflects the fact that international faculty members disproportionately work in departments with stricter grading practices. When I add the trend interactions in columns 6 and 7, the difference in grades shrinks and is partly absorbed by the trend difference, which is in the same direction. Although the level-difference is no longer statistically significant in columns 6 and 7, the differences in grading practices between international and domestic instructors remain jointly significant in these models (see reported p-values from F-tests in the table).

The coefficient estimates on the interaction terms themselves in columns 6 and 7—i.e.,  $\beta_4$ —capture assimilation. There is no evidence that the grading practices of international faculty converge toward those of domestic faculty over time. In fact, the grade gap suggestively widens on a semester-to-semester basis, by 0.12 points per 100 semesters since Ph.D. completion using the full model, although the negative point estimate is not statistically significant.

Finally, although not shown in these tables, the coefficients on some commonly used control variables, such as class enrollment and class level, share the same patterns as prior research. Specifically, grades increase when enrollment decreases or when courses are more advanced (Babcock, 2010; Butcher et al., 2014; Franz, 2010; Kokkelenberg et al., 2008). Full results are in Table B-2.

### *The grade gaps by seniority*

Table 7, where I divide work time in U.S. academia into two bins: below and above median (44 semesters), presents substantively similar results to those shown in Table 6. Figure 1 shows results from a model that expands on the binned approach, comparing grade gaps between faculty members at three work time stages: less than 10 years, 10-25 years, and more than 25 years. When compared with domestic faculty members with less than 10 years in U.S. academia (the reference group), the international-domestic grade gap widens as work time increases ( $p>0.05$ ). In contrast, among domestic faculty, changes in grading behaviors with experience are small, insignificant, and not consistent in sign.<sup>19</sup>

### *Compositional effects*

In this section, I show results from models in which I substitute for the variable *international status* with four regional indicators, which are *United States*, *Asia*, *Europe* and *Other*.

Table 8 presents the results of my preferred specification using the four region indicators as key predictors (*United States* as the reference group). Column 1 shows that the grade gaps found among instructors of different regions are substantively similar, on average. More importantly, the coefficients on the interaction terms with experience are negative for all groups. (The coefficient is especially large for the *Other region* group, although my sample for this group is small and for this reason, I do not put much weight on this result). A limitation of the model in Table 8 is that it is underpowered, but it gives

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<sup>19</sup> I also run this test with the group of novice instructors set to those with 3 and 5 years in U.S. academic jobs (Appendix Table B-5).

no indication that composition bias is an important concern. The lack of evidence of assimilation holds up for each regional group.

### ***Robustness checks***

I conducted two additional robustness checks to address potential measurement error concerns in the way the variables *international* and *work time in U.S. academia* are constructed. Table 9 shows results of these robustness tests conducted on (a) tier-1 data only—i.e., instructors whose online profiles reported their countries of bachelor’s degree attainments—and (b) instructors with U.S. terminal Ph.D. degrees. Both tests produce larger standard errors than the main results, however, the coefficients are comfortably within the 95% confidence interval of the point estimates in Table 6. The test on tier-1 information (columns 1-2) yields slightly larger coefficients than the main results, which confirms that measurement errors attenuate the main estimate. The test on instructors with U.S. terminal degrees (columns 3-4) produces a smaller negative gap, which is aligned with the findings by Friedberg (2000) – internationals with domestic degrees can assimilate better into the job than those who did not receive domestic education.

### ***Extension***

I also tested for heterogeneity to understand whether instructors subscribe to different grading behaviors on the basis of professorial ranks (tenure vs. non-tenure), gender (male vs. female), fields (STEM vs. non-STEM) and the grading standards in their home countries. Results of these tests show no significant differences in terms of the conditional grade-gap and assimilation rates across professorial ranks and home country grading standards. Suggestively, international female instructors are more stringent with their grades and diverge more than international male instructors. International instructors



in STEM fields have higher assimilation rates than those in non-STEM fields, which is consistent with prior research (Kim et al., 2011). Results from these tests are presented in Tables B-6 to B-10.

### **Conclusion**

My analysis shows that grading practices at research universities differ between international and domestic instructors. International faculty members assign lower grades to students in undergraduate courses than their domestic peers. In terms of assimilation, I find no evidence that international faculty converge in the grading behaviors of domestic instructors, and if anything, they diverge slightly. Indeed, the international-domestic instructor grade gap is wider among more experienced faculty. The regional shifts over time in home countries of the international group (from more Europeans among senior instructors to more Asians among junior instructors) does not account for my findings, as I obtain similar results looking within regions of origin among international faculty.

This paper extends our understanding of the assimilative behaviors of high-skilled immigrants by focusing on the context of the U.S. academic work environment. International faculty do not seem to assimilate, at least with respect to grading. In fact, given my estimates are understated due to attenuation bias from measurement error in my data collection process, if anything, my results suggest non-assimilative behavior as the grades that international faculty assign slowly diverge from their domestic peers.

My analysis leverages new data on international instructors in higher education. Although my dataset does not cover the universe of higher education instructors (and far from it), it is the only dataset constructed to recover a large sample of international instructors for the purpose of quantifying assimilative behavior. Using class-average

grades, the dataset also allows me to control for grading practices at the department level, rather than at the university or field level as in prior research. This strength of my dataset—that it was built to study grading practices—is also a limitation in the sense that there are many other behavioral aspects of faculty work that are not addressed (e.g., research and service). Still, grading practices are an important part of academic work, and useful to study given that there is some subjectivity in the process of assigning grades. When using grading as a marker of assimilation, my findings conform with prior literature using different outcomes in similar contexts (e.g., Borjas, 2000; Friedberg, 2000; Kim et al., 2012; Feliciano & Lanuza, 2016).

To university or department administrators, this suggests that as international scholars are recruited, they will maintain dimensions of diversity in the workforce, which may be desirable. With respect to grading in particular, the divergent grading practices that international faculty maintain also may help curb grade inflation, a pressing problem at some universities (Butcher et al., 2014; Denning et al., 2020; Rojstaczer & Healy, 2012). However, there needs more efforts in acknowledging and addressing international instructors' assimilation struggles. Future research can build from this paper to examine whether my findings replicate when looking at other aspects of the academic profession, such as service. Or another development is to examine the home-country characteristics of international instructors to unpack the factors that may influence their grading decisions.

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## Tables and figures

Table 1: Descriptive statistics by instructor

	Full sample	Domestic	International	Faculty (no graduate instructors)
	(1)	(2)	(3)	(4)
Number of instructors	2,789	2,217	534	2,023
Number of instructors with no missing values	2,495	1,985	510	1,761
International instructors	534	-	-	384
Race				
<i>White</i>	0.68 (0.47)	0.76 (0.43)	0.38 (0.49)	0.72 (0.45)
<i>Black</i>	0.05 (0.21)	0.05 (0.21)	0.04 (0.20)	0.04 (0.21)
<i>Asian</i>	0.10 (0.30)	0.02 (0.13)	0.43 (0.50)	0.09 (0.29)
<i>Hispanic</i>	0.02 (0.14)	0.01 (0.12)	0.05 (0.21)	0.02 (0.14)
<i>Race (other/unknown)</i>	0.16 (0.37)	0.17 (0.37)	0.10 (0.29)	0.12 (0.33)
Gender				
<i>Male</i>	0.54 (0.50)	0.55 (0.5)	0.53 (0.50)	0.57 (0.50)
<i>Female</i>	0.44 (0.50)	0.44 (0.5)	0.43 (0.50)	0.42 (0.49)
<i>Gender (other/unknown)</i>	0.02 (0.15)	0.02 (0.13)	0.03 (0.18)	0.01 (0.12)
Ranks				
<i>Graduate instructors</i>	0.26 (0.44)	0.26 (0.44)	0.27 (0.45)	0.00 (0.00)
<i>Instructor/Lecturer/Adjunct</i>	0.20 (0.40)	0.23 (0.42)	0.08 (0.27)	0.28 (0.45)
<i>Visiting/Post-doctoral fellow</i>	0.06 (0.24)	0.05 (0.22)	0.10 (0.30)	0.08 (0.27)
<i>Other non-tenured instructors</i>	0.05 (0.22)	0.06 (0.23)	0.02 (0.14)	0.07 (0.25)
<i>Assistant Professor</i>	0.10 (0.30)	0.09 (0.28)	0.15 (0.36)	0.13 (0.34)
<i>Associate Professor</i>	0.13 (0.34)	0.13 (0.33)	0.17 (0.38)	0.19 (0.39)
<i>Full Professor</i>	0.14 (0.35)	0.14 (0.34)	0.18 (0.38)	0.20 (0.40)
<i>Emeritus</i>	0.04 (0.20)	0.05 (0.21)	0.02 (0.14)	0.06 (0.23)
<i>Rank unknown</i>	0.01 (0.10)	0.01 (0.1)	0.01 (0.09)	0.00 (0.00)
Ph.D. School rank				
<i>Ph.D. School US 1-50</i>	0.20 (0.40)	0.20 (0.40)	0.23 (0.42)	0.28 (0.45)
<i>Ph.D. School US 50+</i>	0.49 (0.50)	0.50 (0.50)	0.51 (0.50)	0.39 (0.49)
<i>Ph.D. School (other) of which</i>	0.50 (0.50)	0.50 (0.50)	0.50 (0.55)	0.33 (0.47)
<i>Non-US Schools</i>	0.04 (0.18)	0 (0.07)	0.16 (0.37)	0.05 (0.21)
<i>Unranked Schools</i>	0.01 (0.12)	0.02 (0.13)	0.01 (0.1)	0.02 (0.14)
<i>Missing</i>	0.01 (0.12)	0.01 (0.12)	0.01 (0.11)	0.02 (0.14)
<i>No Ph.D.</i>	0.44 (0.49)	0.26 (0.44)	0.07 (0.26)	0.24 (0.42)

Table 2: Sample descriptive statistics (by semester-courses)

		Full sample	Faculty sample (No graduate instructors)
		(1)	(2)
Number of courses		22,449	19,242
Number of courses taught by instructors with no missing values		19,811	16,745
Number of courses taught by international instructors		3,429	2,801
Work time in U.S. academia (by term)		42.19 (37.59)	49.74 (35.98)
Work time in U.S. academia (by year)		14.06 (12.53)	16.58 (11.99)
Work time in U.S. academia, missing		0.10 (0.31)	0.12 (0.32)
Race			
	<i>White</i>	0.73 (0.44)	0.76 (0.43)
	<i>Black</i>	0.05 (0.21)	0.05 (0.21)
	<i>Asian</i>	0.07 (0.25)	0.06 (0.24)
	<i>Hispanic</i>	0.02 (0.13)	0.02 (0.13)
	<i>Race (other/unknown)</i>	0.13 (0.34)	0.11 (0.32)
Gender			
	<i>Male</i>	0.57 (0.49)	0.58 (0.49)
	<i>Female</i>	0.41 (0.49)	0.41 (0.49)
	<i>Gender (other/unknown)</i>	0.02 (0.13)	0.01 (0.10)
Ranks			
	<i>Graduate instructors</i>	0.13 (0.34)	0.00 (0.00)
	<i>Instructor/Lecturer/Adjunct</i>	0.25 (0.43)	0.29 (0.45)
	<i>Visiting/ Post-doctoral fellow</i>	0.04 (0.19)	0.04 (0.21)
	<i>Other non-tenured instructors</i>	0.09 (0.29)	0.11 (0.31)
	<i>Assistant Professor</i>	0.08 (0.27)	0.09 (0.29)
	<i>Associate Professor</i>	0.19 (0.39)	0.22 (0.41)
	<i>Full Professor</i>	0.17 (0.38)	0.2 (0.4)
	<i>Emeritus</i>	0.04 (0.19)	0.05 (0.21)
	<i>Rank unknown</i>	0.01 (0.09)	0.00 (0.00)
Ph.D. School rank			
	<i>Ph.D. School US 1-50</i>	0.23 (0.42)	0.27 (0.44)
	<i>Ph.D. School US 50+</i>	0.47 (0.49)	0.41 (0.49)
	<i>Ph.D. School (other) of which</i>	0.42 (0.49)	0.32 (0.46)
	<i>Non-US Schools</i>	0.03 (0.17)	0.04 (0.19)
	<i>Unranked Schools</i>	0.02 (0.12)	0.02 (0.13)
	<i>Missing</i>	0.02 (0.12)	0.02 (0.13)
	<i>No Ph.D.</i>	0.35 (0.47)	0.25 (0.43)
Class average grade		3.26 (0.47)	3.29 (0.46)
Class average grade, missing		0.00 (0.09)	0.01 (0.09)
Enrollment		52.79 (76.46)	55.03 (80.08)
Introductory level course		0.49 (0.5)	0.45 (0.5)
Intermediate level course		0.25 (0.43)	0.26 (0.44)
Advanced level course		0.26 (0.44)	0.29 (0.45)



Table 3: Breakdown of international instructors' countries of origin (top-10)

Country of origin	Counts	Percent	Average time in U.S. academia (by semester)
France	12	0.02	24.46
Italy	15	0.03	52.07
Turkey	15	0.03	3.89
Russia	16	0.03	18.58
Israel	17	0.03	44.27
Germany	23	0.04	30.20
Canada	24	0.04	38.00
Britain	26	0.05	58.81
Korea	33	0.06	35.32
India	59	0.11	35.61
China	109	0.20	27.69
Others	185	0.34	-
Total	534	1.00	36.24

Table 4: Breakdown of instructors with a non-U.S. Ph.D.

Country of Ph.D. schools	Counts	Percent	Average time in U.S. academia (by semester)
Australia	5	0.05	93.90
Israel	6	0.06	31.92
Germany	13	0.13	40.98
Canada	19	0.19	55.58
Britain	22	0.22	61.01
Other	34	0.34	-
Total	99	1.00	64.33

Table 5: International instructors in selected departments

Department	University	Average ratio of international/domestic over 21 semesters*
Statistics	Michigan State University	0.86
Political Science	Michigan State University	0.61
Comparative Literature	Indiana University	0.58
Computer Science	University of Missouri	0.48
Mechanical Engineering	University of Missouri	0.46
Economics	University of Missouri	0.45
Math	Michigan State University	0.43
Music	Indiana University	0.02
Law	Indiana University	0.007
Military Science	University of Missouri	0

\* Calculated as  $(\sum_{t=1}^{21} \frac{\#unique\ international\ instructors_{jt}}{\#total\ instructors_{jt}})/21$ , semester  $t$ ; department  $j$ .

Table 6: The deviation of class-average grades by faculty international status

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Class average grades						
International status ( $\beta_1$ )	-0.13*** (0.04)	-0.13*** (0.04)	-0.14*** (0.05)	-0.14*** (0.05)	-0.07** (0.03)	-0.04 (0.04)	-0.02 (0.04)
Time in U.S. academia (100-semesters)		-0.06 (0.04)	-0.04 (0.04)	-0.05 (0.04)	-0.02 (0.03)	-0.01 (0.03)	-0.00 (0.04)
International * Time ( $\beta_4$ )						-0.23** (0.11)	-0.12 (0.09)
Constant	3.31*** (0.02)	3.33*** (0.03)	3.37*** (0.04)	3.33*** (0.03)	3.33*** (0.03)	3.31*** (0.03)	3.32*** (0.03)
N, semester-courses	18,849	16,745	16,745	16,745	16,745	16,745	16,745
Departments	219	219	219	219	219	219	219
Semesters	21	21	21	21	21	21	21
Instructors	1,987	1,761	1,761	1,761	1,761	1,761	1,761
R-squared	0.01	0.01	0.11	0.12	0.09	0.12	0.09
F test (p-value): $H_0: \beta_1 = 0$ and $\beta_4 = 0$						0.00	0.08
Race and gender			X	X	X	X	X
Ph.D. school rank			X	X	X	X	X
Class size and level			X	X	X	X	X
Semester fixed effects				X	X	X	X
Department fixed effects					X		X

Note: Robust standard errors in parentheses, clustered at department level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 7: The deviation of class-average grades by faculty international status at different work time stages

VARIABLES	(1)	(2)
	Class-average grades	
International status ( $\beta_1$ )	-0.07** (0.03)	-0.05 (0.03)
Work time in U.S. academia (above median)	-0.03 (0.02)	-0.02 (0.03)
International status * Time (above median) ( $\beta_4$ )		-0.07 (0.05)
Constant	3.33*** (0.03)	3.33*** (0.03)
N, semester-courses	16,745	16,745
R-squared	0.09	0.09
F test (p-value): Ho: $\beta_1 = 0$ and $\beta_4 = 0$		0.08
Departments	219	219
Semesters	21	21
Race and gender	X	X
Ph.D. school rank	X	X
Class size and level	X	X
Semester fixed effects	X	X
Department fixed effects	X	X

Note: Robust standard errors in parentheses, clustered at department level  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Figure 1: Widening gaps as international instructors become more senior  
 (Compared with domestic faculty of less than 10 years in U.S. academia)

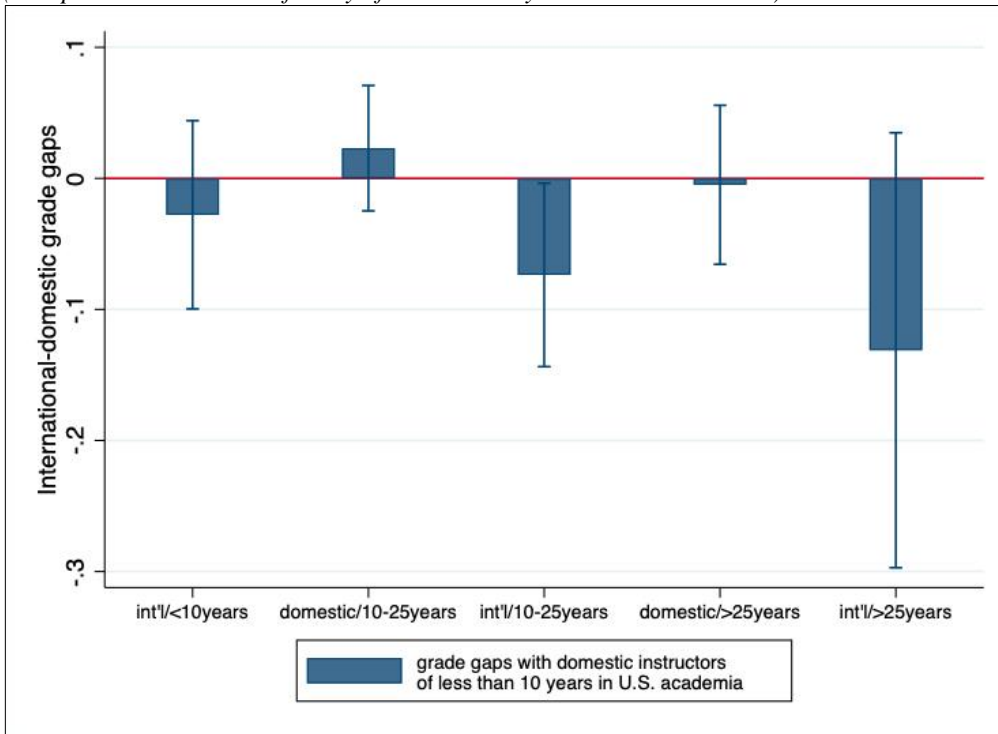


Table 8: Faculty regional composition effects on class-average grades

VARIABLES	(1)	(2)
	Class-average grades	
Asia ( $\beta_1^{Asia}$ )	-0.07 (0.07)	-0.05 (0.08)
Europe ( $\beta_1^{Europe}$ )	-0.08 (0.05)	0.01 (0.06)
Other regions ( $\beta_1^{Other}$ )	-0.07 (0.04)	0.04 (0.08)
Work time in U.S. academia (by 100-semester)	-0.02 (0.03)	-0.00 (0.04)
Asia * Work time ( $\beta_4^{Asia}$ )		-0.03 (0.11)
Europe * Work time ( $\beta_4^{Europe}$ )		-0.18 (0.15)
Other regions * Work time ( $\beta_4^{Other}$ )		-0.30** (0.13)
Constant	3.33*** (0.03)	3.31*** (0.03)
N, semester-courses	16,745	16,745
R-squared	0.09	0.09
F-test (p-value): Ho: $\beta_1^{Asia} = 0$ & $\beta_1^{Europe} = 0$	0.20	
F-test (p-value): Ho: $\beta_4^{Asia} = 0$ & $\beta_4^{Europe} = 0$		0.50
Departments	219	219
Race and gender	X	X
Ph.D. school rank	X	X
Class size and level	X	X
Semester fixed effects	X	X
Department fixed effects	X	X

Note: Robust standard errors in parentheses, clustered at department level

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 9: Robustness tests with more homogenous samples

VARIABLES	Class-average grades			
	(1)	(2)	(3)	(4)
	Tier-1 data only		U.S. terminal degree only	
International status ( $\beta_1$ )	-0.09** (0.04)	-0.03 (0.05)	-0.05 (0.05)	0.00 (0.05)
Work time in U.S. academia	-0.04 (0.03)	-0.02 (0.04)	-0.04 (0.03)	-0.03 (0.04)
International status * Time ( $\beta_4$ )		-0.14 (0.13)		-0.12 (0.18)
Constant	3.34*** (0.03)	3.33*** (0.03)	3.34*** (0.03)	3.33*** (0.04)
N, semester-course	13,556	13,556	13,059	13,059
R-squared	0.10	0.10	0.10	0.10
Departments	217	217	217	217
Race and gender	X	X	X	X
Ph.D. school rank	X	X	X	X
Class size and level	X	X	X	X
Semester fixed effects	X	X	X	X
Department fixed effects	X	X	X	X

Note: Robust standard errors in parentheses, clustered at department level.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## **APPENDIX**

### ***Appendix A-1: Data construction process***

This section describes how the dataset of 2,789 randomly selected university instructors is built to fit the analysis.

The dataset is built from two sources. The first is from the course data from three focal universities (Indiana University, University of Missouri and Michigan State University) spanning all semesters between 2011 and 2017 inclusively (hereafter: grade dataset). I downloaded these publicly available data from the university registrars' websites. The grade dataset has information about class-average grades, class levels, class enrollment, numbers of each letter-grades, departments, semesters and most importantly, class instructors' full names.

The second source is a unique dataset with information on instructors' qualifications and demographics (hereafter: instructor dataset), which I manually collected based on instructors' full names, universities and departments.

With these two data sources, I address the limitations of widely used survey databases in the existing literature. The grade dataset is based on administrative records of courses taught by faculty at the three universities, which ensures no concerns about non-random sample attrition. The instructor dataset contains instructors' nationality information, which enables me to attain specific country-level statistics.

The construction of my dataset proceeded in the following steps:

#### *Step 1: Identify the sample size*

First, the initial downloaded grade file yielded a universe of 18,000 instructors who taught over 166,000 classes during 21 semesters. Given that the instructor dataset

requires manual data construction, my first objective was to identify the sample size that would be large enough to detect meaningful difference in grading behavior and ensure feasibility for a manual data search. A pre-analysis showed that in order to achieve a *minimum detectable effect size of 10 percent of a standard deviation of the average-grade distribution*, my target standard error size needed to be 0.025 for the main analysis, per the following:

$$Z = \frac{\sigma * t}{St.Dev(G)} \Rightarrow 0.1 = \frac{\sigma * 1.96}{0.5} \Rightarrow \sigma \approx 0.025$$

In this equation, Z is the effect size,  $\sigma$  is the target standard error of the parameter of interest (i.e., international status), t is the critical t-value, and St. Dev(G) is the standard deviation of the class-average grades of the population.

To perform an *ad hoc* power calculation, I collected information from 300 randomly selected instructors as a test sample (100 from each university) and calculated the standard errors of the main effect when I artificially duplicated the test sample repeatedly. My calculation showed that when my sample increased 10-fold to 3,000 faculty observations, the standard error was approximately 0.025. Although this *ad hoc* power calculation is not perfectly accurate because it replicates the same exact 300 observations, it gives a good estimate of the actual standard error as the real sample size grows. Based on this calculation, I collected data for 3,000 instructors to ensure a well-powered model with the ability to statistically detect meaningful grading differences between domestic and international faculty.

*Step 2: Randomly select 3,000 instructors*

Next, I utilized a stratified sampling strategy to create a drawing pool of instructors from departments and then randomly selected 3,000 instructors from within.

To ensure that exceptionally large or small departments were not overrepresented in the drawing pool, I removed small departments of less than 10 instructors because too small departments will not satisfy department fixed-effect designs. For large departments of over 100 instructors, I randomly selected 100 to enter the pool. Departments with instructor population from 11 to 99 enter the pool as they are. Then, I randomly selected 1,000 instructors from the stratified population at each university to make up the instructor dataset of 3,000 instructors. Given that the distribution of international instructors by field and department was unknown to me at the sampling stage, I applied this strategy to ensure that the sampled 3000 instructors were representative of departments in three universities.

*Step 3: Manually collect instructors' data*

With the list of 3,000 instructors in hand, I moved onto the manual data collection. This was the most labor-extensive step. I conducted a manual search to obtain qualifications and demographic information of each instructor. I collected this information from instructors' curricula vitae and websites. In rare instances when these sources were unavailable, I substituted with information from other sources, such as Scopus, LinkedIn, news articles and university bulletins. This completed the instructor dataset.

*Step 4: Assemble the final data*

At this step, I merged the instructor dataset with the grade dataset and removed those whose profiles are not available online. This completes a dataset of 2,789 instructors who taught 22,449 undergraduate courses in three universities during 21 semesters.



**Appendix B - Tables**

Table B-1: Leading countries categorized by work time in U.S. academia and fields  
Top-10 leading countries of origin

Rank	Time in U.S. academia (below median)	Time in U.S. academia (above median)
1	China	China
2	India	India
3	Canada	Britain
4	Korea	Ukraine
5	Israel	Canada
6	Britain	Romania
7	Japan	Korea
8	Lebanon	Poland
9	Germany	Italy
10	Russia	Germany
Number of countries	61	37

Top-5 leading countries in STEM

Rank	Time in U.S. academia (below median)	Time in U.S. academia (above median)
1	China	Ukraine
2	India	China
3	Canada	India
4	Britain	Romania
5	Greece	Korea

Top-5 leading countries in non-STEM

Rank	Time in U.S. academia (below median)	Time in U.S. academia (above median)
1	China	Britain
2	India	Canada
3	Canada	India
4	Korea	Israel
5	Israel	China

Table B-2: The deviation of class-average grades by faculty international status over time

VARIABLES	(1)	(2)	(3)	(4)
	Class-average grades			
International status ( $\beta_1$ )	-0.14*** (0.05)	-0.04 (0.04)	-0.07** (0.03)	-0.02 (0.04)
Work time in U.S. academia (by 100-semesters)	-0.05 (0.04)	-0.01 (0.03)	-0.02 (0.03)	-0.00 (0.04)
International status * Time in U.S. academia ( $\beta_4$ )		-0.23** (0.11)		-0.12 (0.09)
Female	0.01 (0.03)	0.01 (0.03)	-0.01 (0.02)	-0.01 (0.02)
Gender (other/unknown)	0.07 (0.10)	0.07 (0.10)	0.06 (0.06)	0.06 (0.06)
Black	0.00 (0.07)	-0.00 (0.06)	-0.06 (0.05)	-0.06 (0.05)
Asian	0.03 (0.05)	0.02 (0.05)	0.05 (0.05)	0.05 (0.05)
Hispanic	0.01 (0.07)	0.00 (0.07)	0.07 (0.07)	0.07 (0.07)
Race (other/unknown)	-0.13*** (0.05)	-0.13*** (0.05)	-0.07* (0.04)	-0.07* (0.04)
Ph.D. school US 1-50	0.04 (0.03)	0.04 (0.03)	0.01 (0.02)	0.01 (0.02)
Ph.D. school (other)	0.10*** (0.03)	0.10*** (0.03)	0.06** (0.03)	0.06** (0.03)
Class enrollment (by 100-students)	-0.19*** (0.03)	-0.20*** (0.03)	-0.17*** (0.03)	-0.17*** (0.03)
Class enrollment squared	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Introductory class level	-0.04 (0.03)	-0.04 (0.03)	-0.04** (0.02)	-0.04** (0.02)
Advanced class level	0.11*** (0.02)	0.11*** (0.02)	0.13*** (0.02)	0.13*** (0.02)
Constant	3.33*** (0.03)	3.31*** (0.03)	3.33*** (0.03)	3.32*** (0.03)
Observations	16,745	16,745	16,745	16,745
R-squared	0.12	0.12	0.09	0.09

Note: Robust standard errors are in parentheses, clustered at department level  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-3: The deviation of class-average grades by faculty international status with course fixed effects and department by course-level fixed effects.

VARIABLES	(1)	(2)	(3)	(4)
	Class-average grades			
International	-0.06*	-0.01	-0.02	-0.01
	(0.04)	(0.05)	(0.03)	(0.04)
Work time in U.S. academia (by 100-semesters)	-0.01	0.01	-0.05	-0.04
	(0.03)	(0.04)	(0.03)	(0.03)
International * Time		-0.11		-0.02
		(0.09)		(0.07)
Constant	3.32***	3.31***	3.36***	3.36***
	(0.03)	(0.04)	(0.03)	(0.03)
N, semester-courses	16,745	16,745	16,745	16,745
R-squared	0.18	0.18	0.03	0.03
Number of departments	219	219		
Number of courses			3,690	3,690
Race and gender	X	X	X	X
Ph.D. school rank	X	X	X	X
Class size and level	X	X	X	X
Semester fixed effects	X	X	X	X
Department by course levels fixed effects	X	X		
Course fixed effects			X	X

Note: Robust standard errors are in parentheses, clustered at department level

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-4: Widening gaps as international faculty become senior

VARIABLES	(1)
International/less than 10 years in U.S. academia	-0.03
	(0.04)
Domestic/10-25 years in U.S. academia	0.02
	(0.02)
International/10-25 years in U.S. academia	-0.07**
	(0.04)
Domestic/more than 25 years in U.S. academia	-0.00
	(0.03)
International/more than 25 years in U.S. academia	-0.13
	(0.08)
Constant	3.31***
	(0.03)
Observations	16,809
Number of semesters	21
Number of departments	219
R-squared	0.10
Semester fixed effects	X
Department fixed effects	X
Race and gender	X
Class size and level	X
Ph.D. school rank	X

Note: Robust standard errors are in parentheses, clustered at department level. Omitted group is domestic instructors with less than 10 years of work time in U.S. academia. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-5: Comparison of international-domestic grade gaps at different career stages

VARIABLES	(1) Faculty with up to 3 years in U.S. academia	(2) Faculty with up to 5 years in U.S. academia
International	-0.059 (0.056)	-0.042 (0.040)
Constant	3.292*** (0.05)	3.285*** (0.05)
Observations	2,363	3,707
R-squared	0.087	0.084
Number of departments	181	193
Race and gender	X	X
Ph.D. schools	X	X
Class size and class level	X	X
Semester fixed effects	X	X
Department fixed effects	X	X

Note: Robust standard errors are in parentheses, clustered at department level.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-6: Heterogeneity effects of professorial ranks on the deviation of class-average grades by faculty international status

VARIABLES	(1) Tenured/tenure track	(2)	(3) Non-tenured	(4)
International status ( $\beta_1$ )	-0.09** (0.04)	-0.01 (0.06)	-0.07 (0.07)	-0.05 (0.07)
Time socializing (100- semesters)	-0.05 (0.04)	-0.02 (0.05)	0.03 (0.06)	0.03 (0.06)
International status * Worktime ( $\beta_4$ )		-0.16 (0.12)		-0.03 (0.14)
Constant	3.31*** (0.04)	3.30*** (0.04)	3.40*** (0.07)	3.40*** (0.07)
F test (p-value): Ho: $\beta_1$ = 0 and $\beta_4 = 0$		0.10		0.64
N, semester-courses	10,130	10,130	6,615	6,615
R-squared	0.10	0.10	0.12	0.12
Number of departments	206	206	188	188
Number of semesters	21	21	21	21
Number of instructors	1,042	1,042	868	868
Race and gender	X	X	X	X
Ph.D. school rank	X	X	X	X
Class size and level	X	X	X	X
Semester FE	X	X	X	X
Department FE	X	X	X	X

Note: Robust standard errors in parentheses, clustered at department level. Bootstrap (x100) to compare the differences of coefficients on international status and interaction term in corresponding columns yield p = 0.54 and 0.11, which means the grade gap ( $\beta_1$ ) in columns 1 and 3 are not statistically different from each other, and the assimilation rate ( $\beta_4$ ) in columns 2 and 4 are also not statistically different from each other. There is not enough evidence that instructors of different professorial ranks follow different grading practices.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-7: Heterogeneity effects of gender on the deviation of class-average grades by faculty international status

VARIABLES	(1)	(2)	(3)	(4)
	Class-average grades			
	Male		Female	
International status ( $\beta_1$ )	-0.01 (0.05)	0.01 (0.07)	-0.12** (0.06)	-0.03 (0.05)
Work time in U.S. academia	0.04 (0.04)	0.04 (0.05)	-0.09* (0.05)	-0.05 (0.05)
International status * Time ( $\beta_4$ )		-0.05 (0.10)		-0.21 (0.17)
Constant	3.24*** (0.04)	3.23*** (0.04)	3.46*** (0.04)	3.45*** (0.04)
Observations	10,029	10,029	6,560	6,560
R-squared	0.10	0.10	0.10	0.10
Number of departments	208	208	189	189
Race and gender	X	X	X	X
Ph.D. school rank	X	X	X	X
Class size and level	X	X	X	X
Semester fixed effects	X	X	X	X
Department fixed effects	X	X	X	X

Note: Robust standard errors in parentheses, clustered at department level. Bootstrap (x100) to compare the differences of coefficients on international status and interaction terms in corresponding columns yield  $p = 0$  and  $0.02$ , respectively. Consequently, both the grade gap ( $\beta_1$ ) in column 1 and 3 and assimilation rate ( $\beta_4$ ) of the two groups in column 2 and 4 are significantly different from each other. International female instructors appear to subscribe to more non-assimilative grading behaviors than international male instructors. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table B-8: Heterogeneity effects of fields on the deviation of class-average grades by faculty international status (STEM vs. non-STEM)

VARIABLES	(1)	(2)	(3)	(4)
	Class-average grades			
	STEM		Non-STEM	
International status ( $\beta_1$ )	-0.09 (0.07)	-0.10 (0.08)	-0.07* (0.04)	0.05 (0.05)
Work time in U.S. academia	0.04 (0.07)	0.03 (0.08)	-0.05 (0.03)	-0.02 (0.04)
International status * Time ( $\beta_4$ )		0.02 (0.12)		-0.28** (0.14)
Constant	3.20*** (0.06)	3.20*** (0.07)	3.39*** (0.03)	3.37*** (0.04)
Observations	5,122	5,122	11,623	11,623
R-squared	0.14	0.14	0.08	0.09
Number of departments	78	78	141	141
Race and gender	X	X	X	X
Ph.D. school rank	X	X	X	X
Class size and level	X	X	X	X
Semester fixed effects	X	X	X	X
Department fixed effects	X	X	X	X

Note: Robust standard errors in parentheses, clustered at department level. Bootstrap (x100) to compare the differences of coefficients on international status and interaction terms in corresponding columns yield  $p = 0.4$  and  $0$ , respectively. This means the grade gap ( $\beta_1$ ) in columns 1 and 3 are not statistically different. However, assimilation rate ( $\beta_4$ ) of the two groups in columns 2 and 4 are significantly different. The divergence trend in grading is observed to be clearer in non-STEM. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table B-9: International grading systems group statistics

Group	Full sample		Faculty sample	
	Number of instructors	Number of semester courses	Number of faculty	Number of semester courses
Group 1: Highest evaluation cut-off at 90% and upper	132	914	93	740
Group 2: Highest evaluation cut-off at 80% - 89%	221	1,102	147	838
Group 3: Highest evaluation cut-off at 70% - 79%	102	692	76	571
Group 4: Other and unidentifiable systems	79	721	68	652
Total	534	3,429	384	2,801

I categorized international grading systems into four groups, based on the highest evaluation cut-off bin. For example, to receive an A, a student in the United States needs to score from 90-92/100, that means the highest evaluation cut-off in the United States falls into the bin of 90% and upper. Similarly, the details of the four international groups are: group 1 - countries with the highest evaluation cut-off at 90% and above; group 2 - countries with the highest evaluation cut-off at 80% to 89%; group 3 - countries with the highest evaluation cut-off at 70% to 79%; and group 4 - other countries with unidentifiable systems. Examples of countries in group 1 are Korea, Italy and Iraq. Group 2 comprises such countries as China, Australia and Japan. Some countries in group 3 are Britain, India, or Nepal. Above is the statistics of the sub-groups.

Table B-10: Heterogeneity effects of home country grading system on the deviation of class-average grades by faculty international status

VARIABLES	(1)	(2)
	Class-average grades	
Cut-off point at 90% and upper	-0.08 (0.05)	-0.03 (0.06)
Cut-off point at 80%-89%	-0.10** (0.05)	-0.05 (0.06)
Cut-off point at 70%-79%	-0.05 (0.08)	0.04 (0.09)
Other systems	-0.06 (0.04)	-0.04 (0.07)
Work time in U.S. academia (by 100-semesters)	-0.02 (0.03)	-0.00 (0.04)
Cut-off point at 90% and upper * Time		-0.12 (0.15)
Cut-off point at 80%-89% * Time		-0.11 (0.11)
Cut-off point at 70%-79% * Time		-0.20 (0.23)
Other systems * Time		-0.06 (0.10)
Constant	3.33*** (0.03)	3.32*** (0.03)
Observations	16,745	16,745
R-squared	0.09	0.09
Number of departments	219	219
Race and gender	X	X
Ph.D. school rank	X	X
Class size and level	X	X
Semester fixed effects	X	X
Department fixed effects	X	X

Note: Robust standard errors in parentheses, clustered at department level.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-11: The deviation of class-average grades by graduate instructors' international status

VARIABLES	(1)
International status	-0.002 (0.04)
Female	-0.03 (0.03)
Other/ unidentified gender	0.02 (0.08)
Black	-0.10* (0.05)
Asian	0.05 (0.05)
Hispanic	0.10** (0.05)
Other/ unidentified race	-0.03 (0.02)
Enrollment	-0.002** (0.001)
Enrollment square	0.06** (0.03)
Class level 1	-0.09** (0.04)
Class level 3	0.09* (0.05)
Constant	3.190*** (0.06)
Observations	2,968
R-squared	0.06
Number of semesters	21
Number of departments	140
Semester fixed effects	X
Department fixed effects	X

Note: Robust standard errors are in parentheses, clustered at department level.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



Table B-12: The differences in assignment of letter grades by faculty international status

VARIABLES	(1) Percentage of Grade-A	(2) Percentage of Grade-B	(3) Percentage of Grade-C	(4) Percentage of Grade-D
International	-3.851** (1.589)	1.930** (0.965)	1.023* (0.550)	0.327 (0.203)
Time in U.S. academia (by 100-semester)	-0.0128 (0.0172)	-0.00139 (0.00967)	0.00953 (0.00649)	0.00160 (0.00212)
Constant	55.94*** (1.586)	28.71*** (0.983)	7.498*** (0.643)	1.233*** (0.198)
R-squared	0.077	0.037	0.065	0.058
Number of instructors	1,761	1,761	1,761	1,761
Number of courses	16,745	16,745	16,745	16,745
Number of departments	219	219	219	219
Number of semesters	21	21	21	21
Race and gender	X	X	X	X
Ph.D. schools	X	X	X	X
Class size and class level	X	X	X	X
Semester fixed effects	X	X	X	X
Department fixed effects	X	X	X	X

Note: Robust standard errors are in parentheses, clustered at department level.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table B-13: Full model with standard errors clustered at instructor level.

VARIABLES	(1) Class-average grade	(2)
International status ( $\beta_1$ )	-0.07** (0.03)	-0.02 (0.04)
Work time in U.S. academia	-0.02 (0.03)	-0.00 (0.03)
International status * Time ( $\beta_4$ )		-0.12 (0.08)
Constant	3.33*** (0.03)	3.32*** (0.03)
Observations	16,741	16,741
R-squared	0.33	0.33
F-test (p-value): $H_0: \beta_1 = 0$ and $\beta_4 = 0$		0.05
Race and gender	X	X
Ph.D. school rank	X	X
Class size and level	X	X
Semester fixed effects	X	X
Department fixed effects	X	X

Note: Robust standard errors in parentheses, clustered at instructor level  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Chapter 3. Home-country characteristics and post-migration behaviors:  
Evidence from Grades Assigned by International Instructors at U.S.  
Universities**

## **Introduction**

Pre-migration characteristics are important determinants of immigrants' lives in their destination countries. Studies show that certain pre-migration characteristics remain after a person migrates to another country. For instance, immigrants with stronger political socialization pre-migration are likely to be more politically engaged post-migration (Guarnizo et al., 2003; Wals, 2011). Another example is immigrants who speak a language with grammatical distinction between present and future tenses are fostered with more future-oriented behaviors (M. K. Chen, 2013). However, the current literature is still limited in connecting pre-migration indicators with post-migration behavioral outcomes.

In work contexts, pre-migration characteristics are usually used to predict occupational mobility of laborer immigrants in the United States (U.S). Akresh (2006) finds that fifty percent of first-generation immigrants to the United States take up jobs of lower hierarchies than their jobs before they migrated. Potochnick and Hall (2021) further this observation, finding that children of immigrants show upward trends in occupational mobility despite their parents' downward experience. High-skilled immigrants broadly—mainly those who work in science, engineering and technology industries with H1-B visas—differ from their native counterparts across important occupational dimensions, regarding expertise, job choice, English fluency, and income (Chiswick & Taengnoi, 2007; Hunt, 2015; Kerr et al., 2015; Ma, 2020).

This paper is built on the assumption that U.S. academia is an immigrant-receiving work environment. With data from three U.S. Research-I universities, it explores how four home-country characteristics explain grading practices as a post-

migration behavior of international instructors in universities. U.S. academia is an immigrant-receiving work environment because it has been receiving an increasing number of immigrant academics for the last several decades. The Survey of Earned Doctorates shows that over 1,000 new non-resident doctorate recipients from over 100 countries and territories are added to the academic workforce every year from 2012 to 2017 (National Science Foundation, 2018).<sup>20</sup> These instructors contribute to campus diversity (Kim et al., 2020), yet the major attention they receive is usually broad statistical reports and comparison with their domestic colleagues in terms of job satisfaction and productivity (Foote et al., 2008).

Given that international academics are a widely diverse population, it is reasonable to examine their post-migration behavior in U.S. academia. A study with this angle helps explain findings of prior research on this group, namely, low job satisfaction, high intent to leave the current workplace, and low promotion rate (Kim et al., 2011, 2020; Mamiseishvili, 2010, 2013; Mamiseishvili & Rosser, 2010; Marvasti, 2005). This paper tests four home-country characteristics and their association with instructors' grading behaviors. The four characteristics are: (1) influence of America in home countries; (2) the school quality of home countries; (3) the level of academic freedom in home countries and (4) the expected wait-time for rewards in home countries. Each of these characteristics is motivated from different literature areas.

My results show that independently, influence of America abroad and expected wait-time for rewards (characteristics 1 and 4) are significant determinants of grading behaviors. For one standard deviation of pro-Americanism in home countries before

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<sup>20</sup> <https://nces.nsf.gov/pubs/nsf19301/data> (Tables 47 and 53)

migrating, instructors assign grades of 0.05 points higher in their courses (or an effect size of 0.11 standard deviations of course-average grades,  $p < 0.05$ ). Regarding wait-time for rewards, if instructors come from cultures where one semester is a satisfactory wait-time for rewards, they give higher grades to students, assigning grades of 0.07 points higher for every standard deviation (or an effect size of 0.15,  $p < 0.01$ ). Meanwhile instructors who have wait-time for rewards longer than one semester lower their grades of 0.06 points for every standard deviation (or an effect size of 0.13,  $p < 0.01$ ). School quality and academic freedom of home countries (characteristics 2 and 3) do not meaningfully predict instructors' grading behaviors.

In addition to performing my analysis separately for each home-country measure, I also conduct a factor analysis that shows all measures load onto a single underlying construct. Based on the factor-loading coefficients, I construct a score of cultural distance from the U.S. that encapsulates differences along all these dimensions simultaneously and perform a summary analysis based on the index. My results from this exercise show that immigrant faculty from countries that are more culturally proximal to the U.S. are more lenient graders. This finding confirms grade inflation in the U.S. is more prevalent than that in other countries (Anglin & Meng, 2000; Denning et al., 2020). Moreover, I also contend that international academics experience a complicated path to assimilation. Assimilation should not be assumed for all international academics.

The remainder of my paper proceeds as follows. First, I define key terminologies. Next, I review the related literatures on different grading norms and home-country characteristics that can reasonably explain instructors' grading behaviors. The next section describes the measure for each home-country characteristic, the unique dataset,

and my variable construction. Then, I present my model and elaborate on my research design. I conclude with the discussion of my results and the contributions to theory and diversity management practice in higher education.

### **Definitions of terminologies**

The following paragraphs are a brief discussion on and the definitions of some key terminologies that are used throughout the paper.

- *Culture* is defined as customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation (Guiso et al., 2006). It is understood that culture is multi-dimensional (Hofstede, 2011), and great efforts have been spent on conceptualizing and measuring different aspects of culture (Minkov & Hofstede, 2012). Understandably, culture and country are different, but using country-level measurements of values and beliefs to study culture is the most common tool as it is practical (Alesina & Giuliano, 2015). In this study, culture is materialized through home-country characteristics.
- *Home-country characteristics* are characteristics of a country from which a person comes. Home-country characteristics allow researchers to distinguish one country from another. The home-country characteristics in this paper are influence of America abroad, school quality, academic freedom, and wait-time for rewards.
- *Home-country measures* are validated indices that researchers have quantified certain home-country characteristics. Home-country measures are variables in use in modeling. In this paper, specifically, influence of America abroad is measured by a country's favorability to U.S. image score; school quality is measured by a country's scores in the Program for International Student Assessment (PISA scores); academic

freedom is measured by freedom of academic and cultural expression; and wait-time for rewards are measured by recognitions of hard work and long-term orientation.

Table 3 provides a summary of home-country characteristics and their corresponding measures.

- *Pre-migration characteristics* describe all characteristics, values, and preferences an individual embodies before they migrate. Home-country characteristics are part of pre-migration characteristics. This paper focuses on home-country characteristics, measured by home-country measures as described above.
- *Post-migration behaviors* are the way immigrants express their preferences and values in the receiving country after they migrate. Here, post-migration behaviors of international academics are measured by their grade assignments as they work as instructors in U.S. academia.

### **Review of related literatures**

#### ***Grading practices as a post-migration behavior***

Grading practices are used to measure post-migration behavior because this is a way that international instructors express their preferences for a quality assignment.

There are several reasons international instructors' grading practice may differ than that of domestic instructors.

First, at the structural level, different grading scales are used in different countries. For example, in France and Francophone Belgium, grades are assigned on a 20-point scale. In the United Kingdom and countries under its influence, students are given grades in percentage points and are categorized into a class system (i.e., first-class honors, upper second-class honors, lower second-class, etc.). Some countries in Asia and

South America maintain a 10-point scale system and have descriptive categories (e.g., “excellent,” “outstanding,” “satisfactory”) rather than letter grades.<sup>21</sup> To address the differences in grading systems, study abroad programs have tools to translate grades obtained from another countries, such as the ECTS (European Credit Transfer System) or the U.S. Credit Transfer System for Study Abroad, but these tools are far from comprehensive (Haug, 1997). Moreover, such grade conversion tools are not always helpful in assisting international instructors to adjust their grading decisions to match with their host institutions’ grading norms.

Second, the ways instructors adjust their grading depend on their fields, disciplines, institutions, and instructors’ personal experiences (Haug, 1997). Regarding the latter, international instructors are trained in a particular cultural system that defines a grade number or letter with differing standards (Witte, 2011). For example, 15/20 is a good grade in France, but converting into German system, it is 2.5, which means mediocre (Haug, 1997). Seventy-one is classified as “First class” in Britain but in the U.S., 71 is in the C range. To the best of my knowledge, no study has sought to understand how international instructors adjust their grading practices when they teach and work abroad.<sup>22</sup>

Third, any adjustments that international instructors actively make with their grading practices are important signals of their behavioral changes to adapt to the new

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<sup>21</sup> Database of grading system <http://www.cimea.it/en/services/publications-and-databases/databases/cimea-mac-laude.aspx>

<sup>22</sup> Borjas (2000) compares grades earned by undergraduate students who worked with domestic teaching assistants (TAs) to those who worked with foreign-born TAs in Economic Principles classes. He finds that foreign-born TAs have an adverse impact on class performance of undergraduate students of about 0.2 grade points. The research focuses on student performance and does not probe for the changes in behaviors of the TAs or graders. However, it suggests there may be a grade gap between students who work with domestic instructors versus foreign-born instructors.



grading norm. Grading is subjective as it reflects both task criteria and individual standards (Wyatt-Smith, 1999). Grading also shows how instructors seek to be part of the in-group faculty at the department (Orr, 2007). When grading, depending on the course content, instructors often make holistic rather than analytical judgments (Bloxham et al., 2011). Written, published criteria are not always followed strictly by instructors (Bloxham et al., 2011).<sup>23</sup> When working in the U.S. academic environment with a different grading system and philosophy, instructors need to make adjustments in their grade decisions. These adjustments require personal judgments, which may well be influenced by their values and preferences from the previous cultural backgrounds.

Migration from one culture to other leads to the need to assimilate oneself into the new environment, in this case, the U.S. academia and a new grading system and philosophy. It is still unclear how international instructors decide to make adjustments to their grading practices. Pham (2021) shows that when considering international instructors as a homogenous group, they give lower grades than their domestic colleagues when teaching undergraduate courses. However, international instructors are far from a homogenous group. This research expands on Pham (2021) to explore how differences in home-country characteristics of international instructors predict their grading behaviors when they teach at U.S. research universities. In what follows, I describe the literature that conceptualizes home-country characteristics that can define behaviors of a country's citizens and can be expressed post-migration.

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<sup>23</sup> More discussion on criterion- versus standard-based assessment and training in Sadler (1987, 2005).

## **Culture constructs to determine post-migration behaviors**

### ***Influence of America in home countries***

The first home-country characteristic that can explain international instructors' grading behavior is the influence of America in their home culture. Recent discussion about pro-Americanism and anti-Americanism describes somewhat contradictory image of the American identity as a nation abroad. Studying the concept of anti-Americanism, Chiozza (2007, 2009) finds that the opinions of foreign public about America are multidimensional, combining of their attitudes toward the U.S. President, the American people, U.S. foreign policy, and U.S. pop culture and entertainment. These opinions may change when there are changes in policy or administration, but overall, the pro-American or anti-American attitudes of one country are stable. The variance, in fact, is cross-country (Katzenstein & Keohane, 2007). At the country level, countries that are pro-American are more open to U.S. customs, thus, their citizens are expected to be more familiar with the American culture (Chiozza, 2007). U.S. citizens, despite certain times of resentment, are usually more favorable of the United States than citizens of other countries (Chiozza, 2007). It is also safe to assume that domestic citizens are familiar with the culture at workplace. As Pham (2021) finds that domestic instructors are likely to give higher grades than international instructors, I expect to see a positive correlation between pro-Americanism and grades assigned by instructors. Vice versa, high anti-Americanism sentiment is expected to have a negative correlation with assigned grades.

### ***Quality of home country schooling system***

The second home-country characteristic is the quality of home country schooling system. This concept has been used largely in explaining immigrant children's academic

outcomes. A number of studies rely on the PISA math scores of one's country of origin to predict immigrant students' math grades in destination countries (Bozick et al., 2016; Levels et al., 2008). Hanushek & Woessmann (2010), in their seminal account, present exhaustive evidence that an international test of educational achievement, like PISA, can explain international differences in student achievements and labor-market outcomes. Given that the university instructors sampled for this paper received schooling of up to post-secondary education in one country, the home country's school quality can meaningfully predict the instructors' behavior. Arguably, there are values embedded in the schooling systems that students absorb as they grow up (Wolf & Macedo, 2004).

The direction of the relationship between school quality and immigrant instructors' grading practices, however, is elusive. On the one hand, coming from a country with high school quality, an instructor would grade harder as they are used to high performance. On the other hand, growing up with a good schooling environment, one would be more lenient with the grades, as they may over adjust to student performance in another country (i.e., the United States).

### *Academic freedom*

The third characteristic is the level of academic freedom in one's home country. The way academic freedom is understood, interpreted, implemented varies across time, regions and regimes (Altbach, 2001). International instructors in U.S. universities come from various countries where academic freedom may be oppressed in the same way as other rights (e.g., Indonesia (Altbach, 2001)), or strictly enforced without concession (e.g., Germany (Karran, 2009)).

It is safe to assume that instructors' experience with academic freedom varies, and thus, leads to differences in their reaction to how academic freedom is expressed on U.S. campuses. For example, an instructor from a country with less academic freedom than the U.S. would likely have limited flexibility to students' innovative ideas and difficulty accepting student confrontation. In the U.S., one of the countries with the highest level of academic freedom globally, it is expected to observe a positive correlation between academic freedom of one's home countries and post-migrating grading behaviors. Similar to the favorability of American culture proposition, this proposition is translated as instructors from countries with less academic freedom would give lower grades than those coming from countries with more academic freedom.

#### ***Wait-time for rewards***

The fourth home-country characteristic is motivated by the fact that grades can be considered a form of rewards (Frey, 2006; Merva, 2003). It is established in education literature that students who have the willingness to delay gratifications are likely to have better grades (Bembenutty, 2009; D. Figlio et al., 2019). However, their time preference, or how long they are willing to delay, varies (Hanushek et al., 2020). The length of time preference has been tested in day (e.g. watching a football match today or prepare for an exam tomorrow (Bembenutty, 2009), or year (e.g. choose to receive a payment now and a larger payment in one or more years (Golsteyn et al., 2014; Sunde et al., 2020), among others. This means even though researchers agree that delayed gratification is positively correlated with better educational outcomes, the duration of the delay is vaguely defined.

Furthermore, current literature on grades does not explore yet the perception of rewards from the graders' side. Depending on the instructors' time preference, they may

or may not consider the grades they assign at the end of the course a form of gratification. Considering that the target population of this paper is international, their time preference can be even more heterogeneous. Instructors who believe that one semester is a sufficient time period for students to receive awards, to acknowledge hard work and contribution during semester, may choose to give high grades. The good grades now play the role of the reward, same as the second marshmallow for the kids who waited.<sup>24</sup> However, if an instructor prefers to see educational outcomes beyond one semester, such as results at graduation, job placement or other long-term life outcomes, they may not grant high grades easily to students.

Here, one semester is a time preference for granting rewards. Instructors who want to gratify students with good grades at the end of one semester come from countries that value recognition and rewards. Those who do not want to use high grades as gratification will have longer time preference, thus, stronger preference for delayed gratification. Regarding the former, I expect to see a positive relationship between the urges to reward students at the end of the semester and instructors' grading decisions. That means instructors who give more values for gratification will assign higher grades. Regarding the latter, I expect a negative correlation between instructors' grades and preference for delayed gratification. *Note that those who want to gratify students at the end of the semester do not necessary embrace instant gratification. Their belief is that one-semester is enough for the rewards.* These are two different attitudes toward the timeframe for gratifications, and I use two different measures in the main estimates.

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<sup>24</sup> In reference to the marshmallow experiment (Mischel et al., 1989): 32 children at the age of 3 years to 6 months old are offered one marshmallow or pretzel stick immediately or two if they wait for 15 minutes. Researchers followed the children and found that the children who waited longer tended to have better life outcomes.

## **Data**

### ***University instructor dataset***

My dataset uses the faculty sample found in Pham (2021) with 2,023 faculty instructors who taught 19,242 courses over a span of 21 semesters. This is a panel dataset, constructed with two components. The first is the course-grade data from three universities -- Indiana University, University of Missouri and Michigan State University - - spanning courses offered during all semesters between 2011 and 2017, inclusively. The second source is a unique dataset of instructors' qualifications and demographics, including the countries of their bachelor's degrees and early employment, race, gender, Ph.D.-granting institutions and their rankings, and work time in U.S. academia. Together, the dataset provides the behavioral changes of academics over time through their grading, and a series of individual characteristics. One of those is country of their bachelor's degree, which is proxied for country of origin.

Despite the unique data and information, Pham (2021) did not fully explore the key variable of country of origin. Largely, what is described in the paper is the statistics of instructors' countries of origin. It is shown that out of 2,023 faculty members of all ranks in the dataset, 384 are international. The international instructor group contributes to 19% of the teaching workforce and comes from 80 countries. Using class-average grades as the outcome variable, Pham (2021) finds a divergent trend in international instructors' grading behaviors, which means they give lower grades to students and continue to become harsher with their grades over time. However, the country-level determinants of the international-domestic grade gap remain elusive after testing of compositional effects, regional indicators and the nature of home-country grading

systems. I expand this dataset by adding five measures of the home-country characteristics (presented above). With these measures, I can further the tests for country-level determinants that can meaningfully predict the differences in international instructors' grading behaviors.

A statistic description of the dataset in use in this paper is presented in Table 1. The data construction process and coding system of the original dataset are presented in Appendix B1. Note that this paper uses only the faculty sample, excluding the graduate instructors.

### *Measures*

#### *Dependent variable: class-average grades*

The key outcome from the dataset is the class-average grade. Aggregated grades were used in prior research to examine departmental grading practices (Butcher et al., 2014). The class-average grade in this study is the mean value of all grades in one class, measured on a 4.0-point scale and rounded to the hundredth decimal place.

#### *Influence of America, measured by favorability to U.S. image*

This measure comes from the Pew Research Center Survey on Global Attitudes and Trends.<sup>25</sup> In the public opinion surveys that the research center conducted in 64 countries since 2002, a question asked: "Do you have a favorable or unfavorable view of the U.S.?" The value of one country in one year is the percentage of respondents in that country who chose "Favorable" to this question. This measure has been employed to study anti-Americanism globally in past research (Chiozza, 2007, 2009; Zhirkov, 2015).

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<sup>25</sup> <https://www.pewresearch.org/global/database/>

To develop a measure of favorability of the American culture, I took the mean value of favorable view toward the U.S. by country from 2002 to 2015.<sup>26</sup> As prior research has shown the favorability toward the U.S. to be stable within country; the mean value over a long time period can capture the general view of the country's favorability to the United States. R<sup>2</sup> statistics shows that the mean value explains 98% of the annual favorability scores. This method is easy to calculate and produces high precision. The variable in use in the equation is the difference of a country to the U.S. with regard to favorability of the American culture. Specifically, I produced this variable using the following formula:

$$D_{ch} = \frac{H_c - H_{US}}{\sigma_h} \quad (1)$$

where  $D_{ch}$  is the difference between country c and the U.S. with regard to favorability of American culture,  $H_c$  and  $H_{US}$  are mean value of the measure of country c and the U.S. respectively,  $\sigma_h$  is the standard deviation of the measure on the country set. The same calculations were applied to produce the corresponding variables for other measures.

*Home-country school quality, measured by PISA scores*

Following prior research using international testing scores to reflect national school quality (Bozick et al., 2016; Hanushek & Woessmann, 2010; Levels et al., 2008), I use the PISA scores to measure the instructors' home-country school quality.<sup>27,28</sup> This

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<sup>26</sup> I do not include values after 2015 because from 2016 onwards, the rise of the Trump administration, with their unconventional foreign policy, led to abnormal responses from the international public about the U.S. image. Given that the grade dataset ranges from 2011- 2017, it is not too critical to include data for the years 2016 and 2017 into the estimation.

<sup>27</sup> For comprehensive discussion on measurements of educational quantity and quality, refer to Glewwe & Kremer (2006).

<sup>28</sup> <https://www.oecd.org/pisa/data/>



home-country measure was constructed in a similar manner to favorability to the American culture measure.

First, I took the mean values of each test results from a country (math, science and reading) over the period from 2000 to 2015.<sup>29</sup> Then I took the difference between this result and the scores of the United States to establish the difference between the two countries. Finally, I standardized the index on the country set to produce the variable for home-country school quality in use in the model. Although PISA provides three test result scores for the three subjects, these scores are strongly correlated. In the main analysis below, I only use the PISA math scores. When other scores are used, the estimates are not statistically different. See Appendix Table A3.

*Academic freedom, measured by Freedom of academic and cultural expression*

The measure of academic freedom comes from the 2019 V-Dem survey, specifically from a question that asks: “Is there academic freedom and freedom of cultural expression related to political issues?”<sup>30</sup> The answer is reported on the scale of 0 to 4, whereby 0 indicates no respect from the authorities and 4 as full respect. The value for each country is the average value across coders within a country, converted from ordinal to interval.

V-Dem surveys collect expert opinions from around the world, rather than public opinion as in Global Attitudes and Trends surveys by Pew Research. They are able to reconstruct democracy-related data of one country or region since the 1800s. Values of each measurement in the surveys are verified and updated annually. This data source provides me with a time-variant score that can be matched with each instructor in the

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<sup>29</sup> Note that PISA is organized every 3 years.

<sup>30</sup> <https://www.v-dem.net/en/data/archive/previous-data/data-version-9/>

dataset. Assume that each instructor lived in their home country until the time they started their terminal degrees, and it took them five years to finish those degrees. The level of academic freedom they experienced in their home country would be approximately that of their country in five years prior to their graduation. For example, a Chinese instructor who received their doctoral degree in 1995 would have the academic freedom value of China in 1990, which is 1.00. Meanwhile, another Chinese instructor who graduated with their terminal degree in 2013 would receive an academic freedom value of China in 2008, which is 1.33. To produce the variable in use in the model, I also took the difference between mean value of each country-year and mean value of the U.S. in the same year; and standardized the differences on the country set.<sup>31</sup>

*Wait-time for rewards, measured by recognitions for hard work and long-term orientation.*

The measure of recognitions for hard work comes originally from the World Value Surveys.<sup>32</sup> A question asks respondents to rank their agreement to two opposite statements: “In the long run, hard work usually brings a better life” (code = 1) and “Hard work doesn’t generally bring success – it’s more a matter of luck and connection” (code = 10). Figlio et al. (2019) used the country values from World Value Surveys waves 2, 3, 5, and 6 to build a variable of hard work. They reverse-coded the original values such that a higher value is associated with the contribution of hard work to success, then averaged

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<sup>31</sup> On a side note, Academic Freedom Index was introduced in 2019 as a global measure of academic freedom status, constructed from expert opinions of 1,810 coders ([https://www.gppi.net/media/KinzelbachEtAl\\_2020\\_Free\\_Universities.pdf](https://www.gppi.net/media/KinzelbachEtAl_2020_Free_Universities.pdf)). However, this index deems the U.S. as among those with insufficient data. For the sake of data completeness, and as domestic instructors are the majority of the instructor dataset, I do not use the new Academic Freedom Index when V-Dem Surveys offer a better option.

<sup>32</sup> <http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp>

the values across four waves at the country level. This method is similar to my method of constructing variables. Therefore, I used the index that Figlio et al. (2019) produced and took the difference between the value of one country with that of the United States to establish the distance between the two countries and standardized on the country set for the analysis.

As mentioned above, the wait-time for rewards in this paper are measured with two variables. Opposition to recognitions for hard work is willingness to delay gratification. Delayed gratification is strongly correlated with the perception of time, and, thus, is usually measured by long-term orientation. Recently, researchers have found more evidence that the long-term orientation index, both at the country and individual level, is a meaningful predictor of positive outcomes such as economic growth (Galor & Özak, 2016), well-being and life satisfaction (Graafland, 2020), or business success (Miller & Xu, 2020). In the context of education, Figlio et al. (2019) find that students coming from long-term oriented cultures perform better in their third grades on every evaluation criterion.

Although research in various contexts uses different methods to calculate long-term orientation scores, this paper follows the measure that Figlio et al. (2019) used in the context of education, which is the dimension calculated by Hofstede et al. (2010). This long-term orientation index is defined as the values fostering future rewards, perseverance, and thrift. Validation tests show that this dimension behaves very similarly to the two comparable indices in World Value Survey (Minkov & Hofstede, 2012) and GLOBE (Hofstede, 2006) – two other commonly used sources of long-term orientation. I

took the difference between the long-term orientation value of one country and the U.S. and standardized the differences on the country set to produce the variable in the analysis.

Table 2 summarizes the description of five home-country measures to be tested in this paper. On the instructor set, the U.S. has its values above average in every measure, except long-term orientation, where its value is in the bottom quartile. The U.S. has the highest score in favorability index, which is consistent with prior research on anti-Americanism (Chiozza, 2007). There were two countries (Ghana and Kenya) receiving a higher score of favorability than the U.S. however, only three instructors in the dataset were from these places. The U.S. is also among the top performers in academic freedom.

The correlation matrix of the five indices is presented in Table 3. Long-term orientation and recognitions for hard work are negatively correlated, which fits with my conceptualization of them being two competing measures. In addition, long-term orientation is positively correlated with PISA scores, which may suggest connections between the future-oriented view embedded in the education system of one country and its school quality. Other correlation coefficients range from 0.1 to 0.4, which indicates moderate relationships.

## **Methodology**

### ***Model***

Using a department-fixed-effects research design, I examine how each of the home-culture indices presented above can meaningfully explain the class-average grade assigned by international instructors relative to domestic instructors. The specification I use is:

$$Y_{ichjkt} = \beta_0 + \beta_1 D_{ich} + \beta_2 T_{it} + \beta_3 X'_i + \beta_4 S'_{ijkt} + \gamma_i + \theta_t + \mu_{ichjkt} \quad (2)$$

In equation (2),  $Y_{ichjkt}$  is the class-average grade given by instructor  $i$  from country  $c$  with regard to home-country character  $h$  who taught class  $k$  in department  $j$  in semester  $t$ , measured on a 4.0-point scale.  $D_{ich}$  is the focal independent variable and takes the value of the differences between country  $c$  and the U.S. regarding home-country character  $h$ . Again, all measures are the standardized differences of a particular country relative to the U.S., so the coefficients on  $D_{ich}$  are to be interpreted as the change on class-average grades for one standard deviation difference of a country from the United States. Domestic instructors receive values of 0 for all measures, per equation (1).

$T_{it}$  is instructor  $i$ 's experience in semester  $t$ , measured as time since the Ph.D. in semesters and divided by 100 for presentational convenience.<sup>33</sup>  $X'_i$  is a vector of demographic and educational background controls for instructor  $i$ , including race, gender, and the prestige of the Ph.D.-granting institution.<sup>34</sup> Among the five racial/ethnic groups (White, Black, Asian, Hispanic, Other and unknown race), White is the reference group. Similarly, male is the reference group for the three gender categories. Among the three groups of degree prestige (schools in the top 50; school not in the top 50 and non-ranked schools by 2018 *U.S. News Ranking*), the group of "top 50" is the reference group.  $S'_{ijkt}$  is a vector of class controls including enrollment and the class level. Class enrollment is measured by the number of students taking class  $k$  in semester  $t$ . The class level variable captures whether class  $k$  is introductory (for courses targeted at freshman students), intermediate (for courses targeted at sophomores) or advanced (for courses targeted at juniors and seniors).  $\varphi_0$  is the intercept.  $\gamma_j$  is a department fixed effect and  $\theta_t$  is a

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<sup>33</sup> Dividing the work time period by 100 helps to prevent small coefficients.

<sup>34</sup> Correlation coefficients of all races and international status are not significant, indicating that they are not correlated. The same model without variables of race yields similar results in terms of direction and statistical significance.

semester fixed effect.  $\mu_{ijkt}$  is the error term. Standard errors are clustered at the department level throughout, appropriately allowing for data dependence in class grades within departments.<sup>35</sup>

In this model, the coefficient  $\beta_1$  captures the effect on grading practices of cultural differences between the origin country and the U.S., as measured by the home-country value. The identifying assumption of this model is that classes assigned international and domestic faculty members are not different on unobserved dimensions within departments, conditioning on class enrollment and class levels.

#### ***Concerns about construct validity***

The way variable country of origin was collected by Pham (2021) raises some concerns about construct validity. In particular, she used a three-tier system to identify an instructor's country of origin. Tier-1 accounts for 80% of the dataset that codes instructors' country of origin based on their countries of their bachelor's degrees. This method is recommended by prior research (Kim et al., 2012). To achieve desired statistical power, however, Pham also collected tier-2 and tier-3 data that are based on the locality of instructors' research interests and surnames. This decision can lead to construct confounding as a threat to validity (Shadish et al., 2002). However, note that to the extent that this coding scheme is problematic, it introduces measurement error, which will only attenuate the coefficients on variables of interest (Angrist & Pischke, 2008, p.303). Thus, any bias caused this measurement problem will only understate the findings, which means any differences in real life would be larger than estimated by this

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<sup>35</sup> The department-level clustering follows the typical protocol of clustering at the most aggregate feasible level, which is conservative (Cameron & Miller, 2015).

model. As a robustness check of my findings to this measurement issue, I also re-estimated the main models using only tier-1 data, and my results are qualitatively similar (Table A3).

## **Results**

### ***Establishment of the Baseline Unexplained Grade gap***

I begin in Table 4 by briefly replicating the grade gaps estimated by Pham (2021) between international and domestic faculty. These gaps are estimated from a version of equation (2) where D is measured as a binary indicator equal to one if the instructor is international, and zero otherwise. The results show that international faculty assign lower grades, on average. The international-domestic grade gap is 0.14 points (or effect size of 0.26 on a 4.0-point scale,  $p < 0.01$ ) before controlling for department effects. Once the department fixed effect is included, the gap reduces by half to 0.07 points, which is equivalent to an effect size of 0.13.

These statistics lead to two observations. First, international instructors, when treated as a single group, assign lower grades than domestic instructors on average. Second, department fixed effects explain a substantial portion of the grade gap, indicating that international faculty are disproportionately working in harder-grading fields. Next, I turn to the question of grading practices differ among international faculty from countries with different culture measurements.

### ***Grade gaps Predicted by Different Home-country measures***

Table 5 shows results of the full estimation using equation (2) with the five home-country indices. Each of these measures are tested independently in columns 1-5. The coefficients across the five columns show that four out of five measures significantly

predict grading behaviors. Those five are: favorability of U.S. image, PISA math scores, academic freedom, recognitions for hard work and long-term orientation.

In column 1, the coefficient indicates a positive relationship between the favorability of U.S. image in home countries and grading behaviors of instructors from that country. In particular, for every standard deviation of favorability above the U.S., international instructors' grades increase by 0.05 points, on average ( $p < 0.05$ ). For perspective, an Israeli instructor who has a favorability score of 0.23 standard deviation below the U.S. score would assign grades that are 0.01 point lower than a comparable domestic instructor. Meanwhile a Turkish instructor with a favorability index of 3.75 standard deviation below U.S. score would give grades that are 0.19 points lower than a comparable domestic instructor. This supports the proposition that favorability to American culture is positively correlated with grading practices.

The relationship of PISA math scores as a measure of school quality and grading behaviors is presented in column 2. The estimate indicates a negative relationship, which means instructors from countries with higher PISA scores assign lower grades to their students. This estimate, however, is only significant at the 10 percent level. When using the other component grades from PISA (science scores and reading scores), the coefficients are no longer significant, but the direction remains.

Column 3 shows that academic freedom is not a significant determinant of grading behavior. This is the only time-variant index, which means instructors coming from the same home countries can be assigned with different home-country values of academic freedom as the values change slightly over the years. With a concern of the time-variant nature of the index, in a supplementary analysis, I use the value of academic



freedom in year 2010 globally. The result remains not statistically different.<sup>36</sup> That means the level of academic freedom in one country does not contribute to explaining its citizens' grading behaviors when working as instructors in U.S. universities.

Columns 4 and 5 together show the way wait-time for rewards can affect grading behaviors. First, the two coefficients on recognitions for hard work and long-term orientation are in opposite directions. Lenient grading is positively associated with recognitions for hard work and negatively with long-term orientation. One standard deviation above U.S. value in the recognitions for hard work score is associated with 0.07 points higher in the class-average grades ( $p < 0.01$ ). On the other end, one standard deviation above U.S. values in the long-term orientation index is associated with 0.06 points lower in the class-average grades ( $p < 0.01$ ). The directions of the two estimates are consistent with what is predicted for these measures. Instructors who have one-semester (or less) as their time preference to give reward will give higher grades to students at the end of the semester. Those who have a longer time preference will be less generous with their grades. This confirms the wait-time for rewards can meaningfully explain grading behaviors.

Column 6 adds all five measures into one regression. After applying Bonferroni corrections to the critical p-values of correlated variables, no coefficients stayed significant. The directions of all estimates remain, except for favorability score, which changes from positive to negative. The magnitudes of the measures change considerably, either increasing or decreasing.

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<sup>36</sup> Refer to Appendix Table A4.

### *Factor analysis*

To have a more precise view on how these five home-country indices effect grading behaviors of instructors at U.S. universities, I conduct a factor analysis to identify how different these constructs are to one another. The factor analysis shows that the five measures load into only one factor.<sup>37</sup> In Table 6, I show the factor loadings of each index. It appears that the five indices, even though loading into one factor, contribute to two opposite directions. Favorability of the U.S., academic freedom and recognitions for hard work are positively correlated with the new combined factor, while PISA math scores and long-term orientation are loaded in the negative correlation. These directions are consistent with the directions of the estimates in the main results (Table 6).

I construct a combined culture factor using the corresponding factor loadings of each measure. Specifically, I create a weighted average of the five measures where the weights are the factor loadings from the factor analysis. The statistics of this combined culture measure is in Table 8. It shows that all countries in the dataset have a lower score than the U.S. For representational purpose, when fitting into equation (2), I multiply this measure with -1 to indicate the larger the value of this combined culture measure, the more different the countries are to the U.S.

Fitting this combined measure into equation (2), the result in Table 9 suggests a negative correlation. For a one unit increase in the combined culture factor (or in other words, the more a country is culturally different from the U.S.), international instructors give a grade of 0.02 points lower (or 3 percent of a standard deviation,  $p < 0.05$ ). This

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<sup>37</sup> I conducted three separate factor analyses, one for each PISA score. In all analyses, eigenvalues range from 2.68 to 2.76 for one factor. The remaining factors receive an eigenvalue of less than 1 or negative. I present here the factor analysis using PISA math score as a measure of school quality.

result can be interpreted as the more similar a country is to the U.S. culturally, the higher grades its citizens assign when working as instructors in U.S. universities.

A caveat of this measure is that out of 80 countries present in the dataset, there are only 28 countries whose combined culture index can be calculated. Yet, these 28 countries account for 95% of the faculty sample in the baseline model. This combined culture factor can explain the grading behaviors of instructors significantly. Thus, this factor analysis shows evidence that the different indices of cultures, despite varying in conceptualization, can be statistically considered as one dimension.

### **Discussion**

This paper tests five different measures of four home-country characteristics that are in use in different literatures. In response to the propositions of four constructs on post-migrating behaviors, the level of familiarity with the U.S. culture has a positive correlation with instructors' grade decisions. Suggestively, the home-country's school quality measured by PISA scores and grade decisions are negatively correlated. As expected, recognitions for hard work and long-term orientation index introduce opposite influences into grading behaviors. Meanwhile, levels of academic freedom in the home country do not affect international instructors' grading. Independently, the five measures are moderately correlated. Together in a factor analysis, these measures are loaded into a single factor, indicating only one underlying aspect of culture. This factor is positively correlated with leniency grading, which indicates that instructors from a culturally similar country to the U.S. assign higher grades to their students and confirms grade inflation in U.S. higher education (Denning et al., 2020; Rojstaczer & Healy, 2012).

There are two explanations for this result of one latent factor, which are also limitations of this paper. First, the cultural constructs in this paper are conceptually not different. This means, even though, theoretically, culture is multi-dimensional, this empirical work does not capture the revelation of different dimensions in one population. Second, grading practices may be limited as a post-migration measurement. Though important, grading is a malleable part of an academic job. The fact that cultural dimensions are not shown in this research may be because the research sample (instructors at three R1 universities) is more homogenous, and different from a country general population. When using a countrywide measure for a selective population, I may have missed capturing certain variances that show the multidimensionality of culture in this case. Future research in this area could examine how culture is revealed as uni- or multi-dimensional in other aspects of this profession.

Nevertheless, there are differences in the behaviors of immigrant and domestic instructors. Considering each home-country measure by itself, it is understandable that the proposition of the influence of America is confirmed. As one is more pro-American, individuals adjust their behaviors to match the American norms of grading. This behavioral change is consistent with what assimilation theorists predict about behavioral assimilation and changes for heuristic purposes (Alba & Nee, 2003; Gordon, 1961). This result also supports the segmented assimilation theory (Portes & Zhou, 2000) in showing that instructors assimilate at different rates captured through their grading behaviors.

Regarding the suggestive relationship between home-country schooling quality and grading behavior, this finding can relate to the research on returns to foreign education. Studies in the U.S. and Israel show that the length of time one studies in a

foreign schooling system does not return as good academic performance (Bozick et al., 2016) and incomes (Friedberg, 2000) as an equal period spent in the domestic educational system. However, if immigrants later receive domestic education, the immigrant-domestic gaps will diminish (Friedberg, 2000). Given that most of the population in this study spent their time completing the terminal advanced degrees in the U.S., it is possible that their behaviors have been adjusted and masked the influence of the prior education.

Long-term orientation index and recognitions for hard work are indices that measure two opposite behaviors regarding attitudes towards gratifications. In particular, these are two different time preferences for reward-granting decisions. Research shows that future-oriented parents are likely to intervene to make the best use of the education systems for their children (Figlio et al., 2019). Transposed into a work environment, the negative correlation between the long-term oriented view of an instructor and their grade assignments suggests similarity with the tendency of “parental intervention.” This finding leads to research possibilities to study how long-term orientation is expressed at work, especially in academic environments.

Academic freedom does not predict international instructors’ grading behaviors, which is somewhat surprising. This result could be due to measurement errors in the academic freedom index, which was designed to measure both academic freedom and freedom of cultural expression in V-Dem Survey. Measurement errors, if present, will bias the estimate toward zero. As indicated earlier, academic freedom is a widely discussed concept but its currently existing measures are highly debatable. This relationship can be tested again with different measures of academic freedom when better indices become available. Nevertheless, this null result does not forfeit the main message

of the paper that international instructors adjust their behaviors differently in response to different cultural aspects.

I conclude by considering the policy implications of my findings as they relate to university management. International scholars do not assimilate or behave like domestic scholars as they work and live in the United States, at least with respect to grading. This suggests that as international scholars are recruited, they will maintain dimensions of diversity in the workforce, which may be desirable. Also, they can relate to international students who share their cultural backgrounds, given these groups are likely to retain similar norms.

However, this also raises questions for diversity and inclusion programs on campus. Cultural backgrounds of internationals may be revealed in a way that either facilitates or prevents the acceptance of U.S. culture and norms. As the findings in this paper show, with regards to specific aspects of culture, international instructors may choose to adopt or resist American norms. A cultural diversity program on campus needs to account for this fact and be more than a replication of the existing race or gender diversity programs.

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## **TABLES**

Table 10: Descriptive statistics

Variables	Faculty set	International faculty	Domestic faculty	Semester-course set
International	0.19 (0.39)	-	-	0.15 (0.35)
International, missing	0.01 (0.10)	-	-	0.01 (0.09)
Favorability of the US	77.76 (11.03)	56.67 (13.32)	82.09	79.09 (8.96)
Favorability of the US, missing	0.03 (0.18)	0.13 (0.34)	-	0.03 (0.17)
Pisa math score	483.04 (31.99)	489.4 (75.75)	481.67	481.88 (26.79)
Pisa science score	494.1 (28.95)	486.86 (68.37)	495.67	493.87 (25.09)
Pisa reading score	495.16 (28.95)	478.24 (66.26)	498.8	495.5 (25.85)
Pisa score, missing	0.03 (0.16)	0.09 (0.29)	-	0.03 (0.16)
Academic freedom	2.73 (1.06)	1.14 (1.48)	3.14 (0.22)	2.84 (0.93)
Academic freedom, missing	0.13 (0.33)	0.07 (0.26)	0.13 (0.34)	0.13 (0.33)
Recognitions for hard work	7.25 (0.33)	6.82 (0.62)	7.35	7.27 (0.3)
Recognitions for hard work, missing	0.03 (0.17)	0.1 (0.3)	-	0.02 (0.15)
Long-term orientation index	32.5 (17.42)	61.17 (25.22)	26	30.78 (15.15)
Long-term orientation index, missing	0.02 (0.13)	0.04 (0.21)	-	0.02 (0.13)
Male	0.57 (0.5)	0.58 (0.49)	0.57 (0.5)	0.58 (0.49)
Female	0.42 (0.49)	0.41 (0.49)	0.42 (0.49)	0.41 (0.49)
Other genders	0.01 (0.12)	0.02 (0.12)	0.01 (0.12)	0.01 (0.1)
White	0.72 (0.45)	0.42 (0.49)	0.8 (0.4)	0.76 (0.43)
Black	0.04 (0.21)	0.04 (0.19)	0.05 (0.21)	0.05 (0.21)
Asian	0.09 (0.29)	0.41 (0.49)	0.02 (0.13)	0.06 (0.24)
Hispanic	0.02 (0.14)	0.04 (0.19)	0.01 (0.12)	0.02 (0.13)
Other/unknown race	0.12 (0.33)	0.09 (0.29)	0.12 (0.33)	0.11 (0.32)
PhD from top 50 universities	0.28 (0.45)	0.32 (0.47)	0.28 (0.45)	0.27 (0.44)
PhD not from top 50 universities	0.39 (0.49)	0.37 (0.48)	0.40 (0.49)	0.41 (0.49)
PhD from elsewhere	0.33 (0.47)	0.31 (0.46)	0.33 (0.47)	0.32 (0.47)
PhD from unranked schools	0.02 (0.14)	0.01 (0.11)	0.02 (0.15)	0.02 (0.13)
PhD from foreign schools	0.05 (0.22)	0.23 (0.42)	0.01 (0.08)	0.04 (0.19)
PhD school missing	0.02 (0.14)	0.02 (0.13)	0.02 (0.14)	0.02 (0.13)
No PhD	0.24 (0.42)	0.05 (0.21)	0.28 (0.45)	0.25 (0.43)
Enrollment	-	-	-	0.55 (0.8)
Introductory level class	-	-	-	0.45 (0.5)
Intermediate level class	-	-	-	0.26 (0.44)
Advanced level class	-	-	-	0.29 (0.45)
Class-average grade	-	-	-	3.29 (0.46)
Class-average grade, missing	-	-	-	0.01 (0.11)
Faculty work time till current course (x100 semesters)	-	-	-	0.5 (0.36)
Faculty work time till current course, missing	-	-	-	0.12 (0.32)
N	2,023	384	1,620	19,242

Table 11: Index description

Home-country characteristics	Home-country measures	Description	Mean (s.d.)	Min	Max	Values of the U.S.	Source
			On country set				
International	Being international	A binary variable taking value of 1 if an instructor is international, and of 0 otherwise.	-			-	Pham (2021)
Influence of America	Favorability of the U.S. ( <i>Favorability index for short</i> )	Percent responding "Favorable" to the question: "Do you have a favorable or unfavorable view of the U.S.?" Average values by country from years 2002-2015	59.76 (17.03)	15.5	84.87	82.1	Pew Research website
School quality	PISA math scores	The PISA scores from 2000-2015, average at country level	463.12 (59.82)	351	581.33	481.67	PISA website
	PISA science scores		468.77 (53.05)	348	557.67	495.67	PISA website
	PISA reading scores		462.38 (51.36)	337	540	498.8	PISA website
Academic freedom	Freedom of academic and cultural expression ( <i>Academic freedom for short</i> )	A variable from V-Dem 2019 that asks: "Is there academic freedom and freedom of cultural expression related to political issues?" The scale is from 0 = no respect from the authorities to 4 = full respect from the authorities. Year in use is 5 years before the year of the highest degree	2.75 (1.02)	0.17	4.00	3.79 (0.12)	V-Dem (2019)
Perceived timeframe for rewards	Long-term orientation	Long-term orientation index is defined as the values that stand toward the fostering of future rewards, perseverance, and thrift.	45.55 (25.06)	0	100	26	Hofstede et al (2010)
	Recognitions for hard work	A variable constructed using question A040 from the World Value Survey. The question asks respondents to choose between two opposite statements: "In the long run, hard work usually brings a better life" (code = 1) and "Hard work doesn't generally bring success - it's more a matter of luck and connection." (code = 10). Value reverse-coded so that a higher value is associated with the importance of hard work, average at country level.	6.68 (0.70)	5.15	8.47	7.35	Figlio et al (2019)

Table 12: Correlation of cultural measures by country

Variables	(1)	(2)	(3)	(4)	(5)
(1) Favorability	1				
(2) Long-term orientation	-0.085 (0.608)	1			
(3) Recognitions of hard work	-0.092 (0.583)	-0.322 (0.017)	1		
(4) PISA math score	0.171 (0.32)	0.623 (0.000)	-0.102 (0.486)	1	
(5) Academic freedom	0.221 (0.124)	0.024 (0.858)	-0.438 (0.000)	0.177 (0.200)	1

\* Note: year 2010 is used in time-variant index (academic freedom)

Table 13: Baseline estimate of the international-domestic grade gap

Variables	(1)	(2)	(3)	(4)
	Baseline grade-gap			
International	-0.13*** (0.04)	-0.14*** (0.05)	-0.14*** (0.02)	-0.07** (0.03)
Observations	18,849	16,745	16,745	16,745
R-squared	0.01	0.11	0.11	0.09
Number of semesters	21	21	21	21
Number of departments	219	219	219	219
Worktime in the U.S.		X	X	X
Race and gender		X	X	X
Ph.D. school rank		X	X	X
Class size and level		X	X	X
Semester fixed effects			X	X
Department fixed effects				X

Note: Robust standard errors in parentheses, clustered at department level. Standard deviation of DV = 0.46. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 14: Different measurements to predict grading behaviors

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Class-average grades					
Favorability	0.05** (0.02)					-0.03 (0.03)
PISA math		-0.03* (0.02)				-0.01 (0.02)
Academic freedom			0.03 (0.03)			0.07 (0.03)
Recognitions for hard work				0.07*** (0.02)		0.04 (0.03)
Long-term orientation index					-0.06*** (0.02)	-0.00 (0.04)
Observations	16,400	16,398	16,592	16,448	16,577	15,938
R-squared	0.09	0.09	0.09	0.10	0.09	0.10
Number of departments	219	219	219	219	219	219
Worktime in the US	X	X	X	X	X	X
Race and gender	X	X	X	X	X	X
Ph.D. school rank	X	X	X	X	X	X
Class size and level	X	X	X	X	X	X
Department fixed effects	X	X	X	X	X	X
Semester fixed effects	X	X	X	X	X	X

Note: All culture measurements are distance to the U.S. and standardized. Robust standard errors in parentheses, clustered at department level. Standard deviation of DV = 0.46. Columns 1-5: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Column 6: Bonferroni corrected p-values for 5 variables

Table 15: Factor loadings from factor analysis

Variables	Combined culture index
Favorability of the US, standardized	0.9159
Academic and expression freedom, standardized	0.8745
PISA math score, standardized	-0.3118
Hard work score, standardized	0.5254
Long-term orientation, standardized	-0.8899

Table 16: Description of the combined culture factor

VARIABLE	Mean (s.d.)	Min	Max	Value of the U.S.
Combined culture index	-0.51 (1.54)	-7.55	0	0
N, countries		28		
N, semester-courses		18,016		

Table 17: Using new factor to predict the international-domestic grade gap

VARIABLES	(1) Class-average grade
Combined culture index	-0.02** (0.01)
Observations	15,938
R-squared	0.10
Number of departments	219
Worktime in the US	X
Race and gender	X
Ph.D. school rank	X
Class size and level	X
Department fixed effects	X
Semester fixed effects	X
Robust standard errors in parentheses, clustered at department level.	
*** p<0.01, ** p<0.05, * p<0.1	



## **APPENDIX - A**

Table A-1: Country set and data availability

Country	Favorability of the U.S.	PISA	Academic freedom	Hard work	Long-term Orientation	Combined culture index
U.S.	X	X	X	X	X	X
Argentina	X	X	X	X	X	X
Armenia	O	O	X	X	X	O
Australia	X	X	X	X	X	X
Austria	X	X	X	X	X	X
Bahamas	O	O	O	O	O	O
Beirut	O	O	O	O	X	O
Belarus	O	O	X	X	X	O
Belgium	O	X	X	X	X	O
Bosnia	O	O	O	X	X	O
Brazil	X	X	X	X	X	X
Britain	X	X	X	X	X	X
Canada	X	X	X	X	X	X
Chile	X	X	X	X	X	X
China	X	X	O	X	X	X
Colombia	X	X	O	X	X	X
Costa Rica	O	X	X	O	O	O
Croatia	O	X	O	X	X	O
Czechoslovakia	X	X	O	O	O	O
Egypt	X	O	O	X	X	O
Ethiopia	X	O	X	O	O	O
France	X	X	O	X	X	X
Georgia	O	X	O	X	X	O
Germany	X	X	X	X	X	X
Ghana	X	O	X	X	X	O
Greece	X	X	X	O	X	O
Honduras	X	O	X	O	O	O
Hong Kong	O	X	X	X	X	O
Hungary	O	X	X	X	X	O
Iceland	O	X	X	X	X	O
India	X	X	X	X	X	X
Iran	O	O	O	X	X	O
Iraq	O	O	O	X	X	O
Israel	X	X	X	O	X	O
Italy	X	X	X	X	X	X
Jamaica	O	O	X	O	O	O
Japan	X	X	X	X	X	X
Jordan	X	X	X	X	O	O
Kenya	X	O	X	O	O	O
Korea	X	X	X	X	X	X
Kuwait	X	O	X	O	O	O
Lebanon	X	X	X	O	O	O

Libya	O	O	X	O	O	O
Lithuania	X	X	O	X	X	O
Malaysia	X	X	X	X	X	X
Mali	X	O	X	X	X	O
Mexico	X	X	X	X	X	X
Morocco	O	O	X	X	O	O
Nepal	O	O	X	O	O	O
Netherlands	X	X	X	X	X	X
New Zealand	O	X	X	X	X	O
Nigeria	X	O	X	X	X	O
Paraguay	O	O	X	O	O	O
Peru	X	X	X	X	X	X
Poland	X	X	X	X	X	X
Portugal	O	X	X	X	X	O
Puerto Rico	O	O	O	X	X	O
Romania	O	X	O	X	X	O
Russia	X	X	X	X	X	X
Saudi Arabia	O	X	X	O	X	O
Senegal	X	O	O	O	O	O
Serbia	O	X	X	X	X	O
Singapore	O	X	X	X	X	O
South Africa	X	O	X	X	X	O
Spain	X	X	X	X	X	X
Sudan	O	X	X	O	O	O
Sweden	X	X	X	X	X	X
Taiwan	O	X	X	X	X	O
Tanzania	X	O	X	O	X	O
Thailand	X	X	X	X	X	X
Tunisia	X	X	X	O	O	O
Turkey	X	X	X	X	X	O
Uganda	X	O	X	O	X	O
Ukraine	X	O	O	X	X	O
UAE	O	X	X	O	O	O
Uruguay	O	X	X	X	X	X
Venezuela	X	X	X	X	X	X
Vietnam	X	X	X	X	X	X
Zimbabwe	O	O	X	X	X	O
Countries with data available	48	52	62	57	61	28

\* Note: X data available; O data not available

Table A- 2: Different measurements to predict grading behaviors (full results)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Class-average grades					
Favorability index	0.05** (0.02)					-0.01 (0.03)
PISA math score		-0.03* (0.02)				-0.01 (0.02)
Academic freedom			0.02 (0.03)			0.06 (0.03)
Recognitions of hard work				0.07*** (0.02)		0.04 (0.03)
Long-term orientation					-0.06*** (0.02)	-0.01 (0.04)
Worktime in the US	-0.03 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.01 (0.03)
Female	-0.01 (0.02)	-0.01 (0.03)	-0.01 (0.02)	-0.01 (0.02)	-0.00 (0.02)	-0.00 (0.02)
Other gender	0.07 (0.06)	0.09* (0.05)	0.08 (0.06)	0.10* (0.05)	0.06 (0.06)	0.09 (0.06)
Black	-0.08* (0.05)	-0.11** (0.05)	-0.07 (0.05)	-0.10* (0.05)	-0.09* (0.05)	-0.13** (0.05)
Asian	0.04 (0.06)	-0.01 (0.04)	0.02 (0.06)	-0.01 (0.04)	0.09 (0.06)	0.06 (0.09)
Hispanic	0.07 (0.07)	0.02 (0.06)	0.05 (0.06)	0.07 (0.07)	0.05 (0.06)	0.06 (0.07)
Other races	-0.08* (0.04)	-0.08* (0.04)	-0.08* (0.04)	-0.09** (0.04)	-0.08* (0.04)	-0.10** (0.05)
Ph.D. school rank 50+	0.01 (0.03)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)	0.02 (0.03)
Other Ph.D. School rank	0.05* (0.03)	0.06** (0.03)	0.06** (0.03)	0.06** (0.03)	0.06* (0.03)	0.07** (0.03)
Enrollment	-0.16*** (0.03)	0.17*** (0.03)	-0.17*** (0.03)	-0.16*** (0.03)	-0.17*** (0.03)	-0.16*** (0.03)
Enrollment square	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Introductory level	-0.04** (0.02)	-0.04** (0.02)	-0.04** (0.02)	-0.04** (0.02)	-0.04** (0.02)	-0.04** (0.02)
Advance level	0.13*** (0.02)	0.13*** (0.02)	0.12*** (0.02)	0.13*** (0.02)	0.12*** (0.02)	0.13*** (0.02)
Constant	3.33*** (0.03)	3.31*** (0.03)	3.32*** (0.03)	3.32*** (0.03)	3.33*** (0.03)	3.32*** (0.03)
Observations	16,400	16,398	16,592	16,448	16,577	15,938
R-squared	0.09	0.09	0.09	0.10	0.09	0.10
Number of departments	219	219	219	219	219	219
Department fixed effects	X	X	X	X	X	X
Semester fixed effects	X	X	X	X	X	X

Note: All culture measurements are distance to the U.S. and standardized. Robust standard errors in parentheses, clustered at department level. Standard deviation of DV = 0.46.

Columns 1-5: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Column 6: Bonferroni corrected p-values for 5 variables

Table A- 3: Different measurements to predict grading behaviors on tier-1 data

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Class-average grades						
International status	-0.09** (0.04)						
Favorability index		0.06** (0.02)					0.00 (0.04)
PISA math score			-0.03 (0.02)				-0.02 (0.02)
Academic freedom				0.02 (0.03)			0.04 (0.03)
Recognitions for hard work					0.08*** (0.03)		0.05 (0.04)
Long-term orientation index						-0.06** (0.03)	0.00 (0.04)
Constant	3.34*** (0.03)	3.34*** (0.03)	3.32*** (0.03)	3.33*** (0.03)	3.33*** (0.03)	3.33*** (0.03)	3.33*** (0.03)
Observations	13,556	13,227	13,358	13,526	13,350	13,415	12,976
R-squared	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Number of departments	217	217	216	217	217	217	216
Worktime in the US	X	X	X	X	X	X	X
Race and gender	X	X	X	X	X	X	X
Ph.D. school rank	X	X	X	X	X	X	X
Class size and level	X	X	X	X	X	X	X
Department fixed effects	X	X	X	X	X	X	X
Semester fixed effects	X	X	X	X	X	X	X

Note: All culture measurements are distance to the U.S. and standardized. Robust standard errors in parentheses, clustered at department level. Standard deviation of DV = 0.46. Columns 1-6: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Column 7: Bonferroni corrected p-values for 5 variables

Table A- 4: Using PISA components scores to predict class-average grades

VARIABLES	(1)	(2)	(3)
	Class-average grades		
PISA math score	-0.03*		
	(0.02)		
PISA reading score		-0.01	
		(0.02)	
PISA science score			-0.02
			(0.02)
Observations	16,398	16,398	16,398
R-squared	0.09	0.09	0.09
Number of departments	219	219	219
Worktime in the US	X	X	X
Race and gender	X	X	X
Ph.D. school rank	X	X	X
Class size and level	X	X	X
Department fixed effects	X	X	X
Semester fixed effects	X	X	X

Note: All independent variables are standardized. Robust standard errors in parentheses; clustered at department levels

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A- 5: Using academic freedom to predict grading behaviors

VARIABLES	(1)	(2)
	Class-average grades	
Academic freedom (time-variant)	0.02	
	(0.03)	
Academic freedom (year 2010)		0.02
		(0.02)
Observations	16,592	16,731
R-squared	0.09	0.09
Number of departments	219	219
Worktime in the US	X	X
Race and gender	X	X
Ph.D. school rank	X	X
Class size and level	X	X
Department fixed effects	X	X
Semester fixed effects	X	X

Note: All independent variables are standardized. Robust standard errors in parentheses; clustered at department levels

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A- 6: Combined culture index - by country

Country	Combined culture index
U.S.	0.00
Argentina	-3.32
Australia	-1.68
Austria	-3.45
Brazil	-2.47
Britain	-3.85
Canada	-2.08
Chile	-2.20
China	-7.55
Colombia	-2.57
France	-4.13
Germany	-5.28
India	-3.41
Italy	-3.56
Japan	-4.56
Korea	-6.54
Malaysia	-4.30
Mexico	-2.04
Netherlands	-5.12
Peru	-1.05
Poland	-4.49
Russia	-6.63
Spain	-3.85
Sweden	-3.95
Thailand	-2.85
Turkey	-6.30
Venezuela	-2.67
Vietnam	-3.50

## **APPENDIX – B**



## **Appendix B-1: Data construction process**

This section describes how the dataset of 2,789 randomly selected university instructors is built to fit the analysis. The dataset is built from two sources:

The first is from the course data from three focal universities (Indiana University, University of Missouri and Michigan State University) spanning all semesters between 2011 and 2017 inclusively (hereafter: grade dataset). These publicly available data were downloaded from the university registrars' websites. The grade dataset has information about class-average grades, class levels, class enrollment, numbers of each letter-grades, departments, semesters and most importantly, class instructors' full names.

The second source is a unique dataset with information on instructors' qualifications and demographics (hereafter: instructor dataset), which was manually collected based on instructors' full names, universities and departments.

The grade dataset is based on administrative records of courses taught by faculty at the three universities, which ensures no concerns about non-random sample attrition. The instructor dataset contains instructors' nationality information, which enables the attainment of specific country-level statistics. The construction of the dataset proceeded in the following steps:

### *Step 1: Identify the sample size*

First, the initial downloaded grade file yielded a universe of 18,000 instructors who taught over 166,000 classes during 21 semesters. Given that the instructor dataset requires manual data construction, the first objective was to identify the sample size that would be large enough to detect meaningful difference in grading behavior and ensure feasibility for a manual data search. A pre-analysis showed that in order to achieve a

minimum detectable effect size of 10 percent of a standard deviation of the average-grade distribution, my target standard error size needed to be 0.025 for the main analysis, per the following:

$$Z = \frac{\sigma * t}{St.Dev(G)} \Rightarrow 0.1 = \frac{\sigma * 1.96}{0.5} \Rightarrow \sigma \approx 0.025$$

In this equation, Z is the effect size,  $\sigma$  is the target standard error of the parameter of interest (i.e., international status), t is the critical t-value, and St. Dev(G) is the standard deviation of the class-average grades of the population.

To perform an ad hoc power calculation, information from 300 randomly selected instructors were collected as a test sample (100 from each university) and the standard errors of the main effect were calculated when I artificially duplicated the test sample was artificially duplicated for multiple folds. The calculation showed that when the sample increased 10-fold to 3,000 faculty observations, the standard error was approximately 0.025. Although this ad hoc power calculation is not perfectly accurate because it replicates the same exact 300 observations, it gives a good estimate of the actual standard error as the real sample size grows. Based on this calculation, a sample of 3,000 instructors were required to ensure a well-powered model with the ability to statistically detect meaningful grading differences between domestic and international faculty.

*Step 2: Randomly select 3,000 instructors*

Next, a stratified sampling strategy was utilized to create a drawing pool of instructors from departments and then randomly selected 3,000 instructors from within. To ensure that exceptionally large or small departments were not overrepresented in the drawing pool, small departments of less than 10 instructors were removed because too small departments will not satisfy department fixed-effect designs. For large departments,

100 instructors were randomly selected from departments of over 100 instructors to enter the pool. Departments with instructor population from 11 to 99 enter the pool as they are. Then, 1,000 instructors were randomly selected from the stratified population at each university to make up the instructor dataset of 3,000 instructors. Given that the distribution of international instructors by field and department was unknown at the sampling stage, this strategy was applied to ensure that the sampled 3000 instructors were representative of departments in three universities.

*Step 3: Manually collect instructors' data*

A manual search was conducted to obtain qualifications and demographic information of each instructor in the list of 3,000 instructors. This was the most labor-intensive step. Information was collected from instructors' curricula vitae and websites. In rare instances when these sources were unavailable, information was substituted from other sources, such as Scopus, LinkedIn, news articles and university bulletins. This completed the instructor dataset.

*Step 4: Assemble the final data*

At this step, the instructor dataset was merged with the grade dataset, those whose profiles are not available online are removed. This completes a dataset of 2,789 instructors who taught 22,449 undergraduate courses in three universities during 21 semesters.

## **Appendix B-2: Measures and coding rules**

This section describes how the key variables were coded in the original dataset found in Pham (2021).

*Grades:* The key outcome of interest is the class-average grade. The class-average grade is the mean value of all students' grades in one class, measured on a 4.0-point scale and rounded to the hundredth decimal place. Alternatively, the percentage of students receiving each letter grade is used as outcomes in a supplementary analysis (Table B-12). Aggregated grades were similarly used in prior research to examine departments' grading practices (Butcher et al., 2014)

*Instructors' international status:* The instructors' countries of origin was collected to construct the key variable of interest: international status (i.e., a binary variable taking a value of 1 if one is international, and 0 otherwise). Information on international status came mainly from instructors' online profiles that reported their countries of bachelor's degree attainments. For example, if an instructor reported that they received their bachelor's degree from China, they would be coded as international, and China would be their country of origin. Eighty percent of the instructors in the sample have their international status coded based on the country from which they received their bachelor's degree, which I describe as "tier-1 information."<sup>38</sup>

An attempt to recover information about international status from the remaining 20 percent of the sample was designed with what is describe as "tier-2" and "tier-3" information. Tier-2 information is based on whether an instructor had clear research

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<sup>38</sup> Forty-three instructors who appear to be foreign-born (by their names or first language) but with B.A. degrees from a U.S. institution are coded as domestic. In these instances, the use of the term "domestic" means that the instructor received postsecondary training the U.S. I have also confirmed my results are robust to dropping these ambiguous cases from the sample.

interests in a specific country and bore a common name of that country. For example, an instructor named Paganini who published several papers on political infrastructure in Italy would be coded as international and assigned Italy as the country of origin. International status assignments based on tier-2 information account for 14% of all instructors. If tier-2 information was also not available, instructors' last names or the languages they speak (tier-3 information) was used. For instance, if no information was found about an instructor to suggest a nationality, and the instructor had the last name of Smith or Johnson, they would be coded as American (i.e., domestic) and the U.S. as their country of origin. Six percent of the instructors were coded based on tier-3 information. The inclusion of the latter two tiers increases the sample size but also increases attenuation bias due to measurement error—empirically, the results suggest that these two factors roughly cancel out, and the results are similar regardless of how the data were subset based on the information tier.<sup>39</sup>

*Work time in U.S. academia:* The time an instructor worked in U.S. academia was measured from the time they received the highest degree (usually Ph.D.) until the current semester. Time since the highest degree is measured in semester units. One year comprises three semesters. In cases where the faculty profile does not indicate the year of the highest degree, work time in U.S. academia was measured by the time since the instructor's first registered publication on their online profile or on Scopus. Using this method across different sources, 97% of the value of work time for the faculty-semester

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<sup>39</sup> I quantified the scope for inaccuracies in the dataset by having another rater recode the country-of-origin variable using my 3-tiered process for 300 randomly selected instructors. The inter-rater reliability is 98% (i.e., there were 6 inconsistencies out of 300). This suggests limited measurement error in terms of rater coding, although the implied degree of measurement error is a lower bound because both raters followed the same imperfect process.

observations. Following this coding system, the value of work time in U.S. academia for graduate students is 0.

This method formally assumes that instructors start working in a U.S. academic job as soon as they graduate. The reason for this assumption is that instructors' work experience before 2011 was unobserved. A consistent way to measure instructors' work time in U.S. academia is from the graduation year, which can be recovered for almost all instructors. This likely induces additional measurement error in the estimates of U.S. academic work time. Any such measurement error should increase attenuation bias, which means the assimilation trends will be biased toward zero, if anything.

*Instructor qualifications:* Instructor qualification measures include their ranks and the prestige of their Ph.D.-granting institutions. Regarding ranks, the highest level of reported job titles was collected when they worked at the universities in the sample and assigned into nine categories.<sup>40</sup> Regarding degree prestige, the Ph.D.-granting institutions of 96% of the faculty members were recovered in the sample. Based on their university ranking in the 2018 U.S. News & World Report, faculty members were grouped into three categories, which are institutions ranked in the top 50; not in the top 50, and non-ranked institutions. The latter includes instructors who received their Ph.D. from abroad and those who did not earn a doctoral degree. Graduate instructors did not have their doctoral degrees when they taught and graded classes. Therefore, they do not have values for the prestige of their Ph.D.-granting institutions.

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<sup>40</sup> Namely: graduate instructor; instructor/lecturer/adjunct; visiting/post-doctoral fellow; other non-tenured instructors; assistant professor; associate professor; full professor; emeritus and other unknown ranks. Instructor ranks are used as a variable because they are correlated with work time. Refer to Ginther & Hayes (1999) for more discussion on modelling ranks.

*Other controls:* To account for instructor heterogeneity along other dimensions, demographic control variables are collected including instructors' race and gender designations. Visual inspections of instructors' pictures that could be found online to classify individuals into five racial/ethnic groups (White, Black, Asian, Hispanic, and other race) and three gender groups (male, female, and unknown gender). With regard to class characteristics, I include class enrollment and class levels as control variables because they are known to predict students' grades (Bean, 1985; Kokkelenberg et al., 2008). Conceptually, it might be argued that this method confounds race as biological, gender as sex (Laughter, 2018), I contend that in the U.S. context, where race is a social construct, this method also presents the social understanding of racial groups rather than a representation of self (Leonardo, 2007). The same argument is applied for gender groups. My sample shares the same representation of race and gender with descriptive statistics of 1) the 2014 IPEDS sample of Research-I universities and 2) the previous study by Li and Koedel (2017). My inter-rater reliabilities for *race* and *gender* are 95% and 98%, respectively.

**Chapter 4. Acculturation into Academia: A Narrative Analysis of  
Instructor Identity Development during Acculturation among  
International Graduate Instructors in a U.S. Public University**



## Introduction

Imagine that an American doctoral candidate in Physics is assigned to teach an advanced level class to a group of Japanese students during his exchange year at Tokyo University. The graduate instructor can speak conversational Japanese but has never taught in this language. His students do not speak English, and there is no interpretation or translation service for the course. How much time and effort must he expend to prepare for the class? Would this instructor still want to continue at Tokyo University after this semester? Now, flip the scenario: A Japanese doctoral candidate in Physics is asked to teach a similar course to a group of American students in a U.S. university. This is a common scenario, but little research has been conducted to date on the strategies that international graduate instructors (IGIs) develop to succeed in their teaching jobs.

Recent years have witnessed an influx of international students entering the U.S. for higher education, a portion of whom stay and join the U.S. workforce. The Survey of Doctorate Recipients (2017) reports that 14.2% of U.S. doctoral scientists and engineers are non-resident, and this number is increasing.<sup>41</sup> In the academic year 2017-2018, there were 135,000 international scholars working or engaging in academic activities at U.S. colleges or universities, representing an increase of 71% since 2000.<sup>42</sup> International students, researchers and instructors increase the diversity of the higher education workforce, helping to attract international students to U.S. universities.

In U.S. academia, some international students work as graduate instructors while pursuing their degrees. As students, this group faces various challenges, both psychological and academic, such as adjusting to U.S. classroom dynamics and the

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<sup>41</sup> [https://ncesdata.nsf.gov/doctoratework/2017/html/sdr2017\\_dst\\_25.html](https://ncesdata.nsf.gov/doctoratework/2017/html/sdr2017_dst_25.html)

<sup>42</sup> <https://opendoorsdata.org/data/international-scholars/all-places-of-origin/>

differences in their self-concept and how other people see them (Jung et al., 2007; Sarkodie-Mensah, 1998; Sato & Hodge, 2009). These dynamics may become more complicated when the international student is also a classroom instructor. Their different cultural backgrounds may create unique work challenges while interacting with undergraduate students, who are 96% domestic and 50% White (NCES, 2018). When international student-instructors start teaching in this new culture, with different classroom norms and dynamics, it is expected that they will experience a transition period to acculturate into the dominant culture (Chiang, 2016; Gorsuch, 2012).

Fast-forward to a point in time when a portion of these students become faculty. They continue to face challenges that strain their sense of belonging at the university. They often have low job satisfaction (Mamiseishvili, 2011; Mamiseishvili & Lee, 2018) and high intent-to-leave their current workplace (Kim et al., 2020). Accounting for approximately 20% of the campus teaching workforce (Mamiseishvili & Rosser, 2010), this highly diverse group of faculty is a minority population who share similar experiences with other minority groups.

A glaring omission in the studies referenced above is that they do not account for acculturation -- the process of balancing the influence of two cultures and making adjustments to self-identification (Schwartz et al., 2010) -- among international faculty as they integrate into a new work environment. Research has shown that foreignness affects immigrants' meaning-making process about work (Kuchinke, 2016) and increases the amount of effort they expend (Gabor, 2016). In academia, international faculty face similar issues as immigrant workers with regards to microaggressions, stereotyping, and sarcasm in various work situations (Alberts, 2008; Y.-W. Chen & Lawless, 2016; Cruz et

al., 2018). Studying international faculty and students through the acculturation lens provides a new understanding of the integration process of this high-skilled immigrant group.

I strive to record the early acculturation stories of international graduate instructors as they start teaching at a U.S. university campus. I explore the instructor identity development of nine Asian IGIs. Specifically, I ask: “*How do Asian international graduate instructors use acculturation strategies in their teaching at a U.S. university?*” I focus on Asian international students because they are the largest group of international students on U.S. campuses, making up 70% of the international population in U.S. higher education.<sup>43</sup> However, it is worth acknowledging that “Asian” encompasses many nationalities and a diverse range of belief systems, customs, and behaviors. This paper does not seek to generalize the characteristics of the Asian identity. Participants in this study self-identify as Asian and describe their home cultural values as such.

My findings are drawn from nine interviews with Asian IGIs from various fields at a pseudonymous Midwestern campus, the University of Nutachi.<sup>44</sup> The interviews demonstrate that students’ behaviors reflect the four strategies associated with acculturation, which I describe in detail below. In brief, I propose a conceptual framework that expands on acculturation theory (Berry, 1997) and visualizes the identity development of international instructors. I apply narrative inquiry (Josselson, 2011; Riessman, 2007) as my methodology for data collection and analysis.

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<sup>43</sup> <https://www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Places-of-Origin>

<sup>44</sup> All proper names, here and elsewhere in this paper, are pseudonyms.

The four acculturation strategies are marginalization, separation, assimilation, and integration. In single-case analysis, I group participants into four groups according to their acculturation strategies. With marginalization, instructors exhibit a low level of engagement with the dominant culture. At the separation, assimilation, and integration stages, instructors embrace their Asian cultural backgrounds while gaining confidence in their interactions with students in a U.S. classroom. The cross-case analysis reveals that whichever strategy they take, Asian IGI's share some commonalities in their behaviors: They are aware English communication is not their strength. Feeling insecure to some degree, the IGI's started teaching with a mindset that may divide them from their students. The word "authority" when used in the classroom is viewed as synonymous to being helpful, which signals cross-cultural differences. These findings shed light on the low job satisfaction and non-assimilative behaviors observed in prior research (Kim et al., 2011; Mamiseishvili, 2010, 2011; Pham, 2021a, b).

### **Related Literatures**

The current literature on international students and instructors provides an overview of their situations in a pre-dominantly white environment. The participants in this study (Asian IGI's) possess dual identities, being both students and instructors; therefore, in the following sections, I first describe the issues that international students and instructors face at work, then go on to elaborate the problems specifically concerning Asian international students and instructors.

Researchers argue that U.S. academia itself is a cultural community, with norms and rules of the game of which foreign-born instructors can be oblivious (Martinez et al., 2017; Marvasti, 2005; North, 1990). Sarkodie-Mensah (1998) listed that, besides limited

English language command as **the** major problem (original emphasis) for international students, they must also adapt to new U.S. classroom cultural norms that were not commonplace in their country of origin. This can include addressing professors by their first names, contributing to class without being called upon, or group work dynamics. Students are also under pressure to achieve academic success without support and appreciation of their own cultures (Sato & Hodge, 2009). Jung, Hecht, and Wadsworth (2007) found that the difference between an individual's self-concept and the identity ascribed by other students and instructors significantly predicted the level of depression among international students.

According to Martinez and Colaner (2017), many stereotypes of Asian-American students do not hold for Asian international students. Whereas Asian-American students are stereotyped as "obedient listeners" (Littlewood, 2000) and are perceived as excelling academically (Chang & Demyan, 2007; Kiang et al., 2017; McGowan & Lindgren, 2006), Asian international students need to find a way to adjust to the new environment before starting to engage academically (Sato & Hodge, 2009). For example, students bring with them the values of their own culture's philosophy, such as Confucianism, which urges them to remain in harmony and respect authority (Martinez & Colander, 2017). These values are usually ignored on Western campuses, and many people have the impression that Asian students are quiet and can be silenced. Asian international students who encounter challenging situations can become increasingly self-aware and are often directed back to their roots and religious beliefs (Sato & Hodge, 2009).

The issues that international students on campus experience carry over into the experiences of international faculty. There is a consensus in current research that

international faculty express different behaviors from their domestic colleagues. They have lower job satisfaction than domestic faculty (Corley & Sabharwal, 2007; Mamiseishvili & Lee, 2018). Foreign-born faculty are also less likely to work in administrative positions (Kim et al., 2020) and have lower intent-to-stay in an academic institution than their domestic counterparts (Kim et al., 2013). Some autobiographical works which attempt to share the struggles of foreign-born instructors while working in U.S. academia indicate challenges with language, discrimination, stereotyping, visa and work permit issues, etc. (Cruz et al., 2018; Major, 2005; Pande & Bettis, 2016).

Working as academics, Asian instructors are usually typologized as “Incomprehensible Others” (Subtirelu, 2015). American students may perceive that their non-native accents have adverse impacts on students’ performance (Chiang, 2016; Subtirelu, 2015). Female Asian instructors are also susceptible to the challenges of negotiating with an institution embedded with white patriarchy and (recently) incorporated with white feminism (A. Lin et al., 2006). The literature on both Asian students and instructors suggests that they have been adopting certain strategies to navigate U.S. academia, resulting in behavioral and career gaps between themselves and their American peers.

As graduate school is an early and critical stage of an individual’s transition into forming an instructor identity (Austin, 2002), I investigate the adoption of different acculturation strategies among international graduate students and the reflection behind their actions. Studies have shown that socialization and the level of support (both formal and informal) provided within academic departments are important determinants of graduate students’ successful transition (Austin, 2002; Nyquist et al., 1999). Yet, little is

known about how international graduate students who also work as instructors, hereby international graduate instructors (IGIs), internalize such factors into their acculturation process to decide on their strategy. This paper shares the narratives of IGIs in their own voices to learn more about the process.

### **Conceptual framework**

Built on the construct of acculturation strategies (Berry, 1997, 2005), the conceptual framework of this paper proposes to organize the strategies in accordance with the development of instructor identity. As IGIs learn to become instructors at a university, they slowly adopt instructor identity in a manner that relates to their acculturation. In what follows, I briefly describe identity and its relevance in examining international groups within U.S. academia. Subsequently, I connect this literature with acculturation strategies and present a conceptual framework which extends the application of acculturation theory for data collection and analysis.

### ***Being an instructor and being an Asian***

Identity is a complicated construct that has been studied and categorized in different ways. In general, personal qualities (e.g., patriot, liberal), ascriptive characteristics (e.g., race, gender), cultural backgrounds, religion or sense of belonging are some (of many) criteria that form an identity (D. G. Smith, 2020, p.24). All participants in this study share two identity criteria: being a graduate instructor and being Asian.

The graduate instructor role is important when it comes to student contact – as IGIs teach in a classroom, lead lab sessions, hold office hours, or grade papers. When they assume the role of an instructor, they are subscribing to a *relational identity*,

defining themselves to some extent in terms of a given role-relationship (Sluss & Ashforth, 2007). The development of this relational identity is further complicated by the Asian cultural identity (i.e., being Asian and its attributes). The instructor's Asian home cultural background may influence their decisions to act and grow as an instructor.

In the educational literature, relational identity is commonly applied to examine student development and teacher development (Friesen & Besley, 2013; Hong et al., 2017). Some researchers have investigated Asian identities as a form of ethnic identity that may exclude Asian students or instructors on campus in different ways as previously noted. However, to my knowledge, this paper is the first attempt to use these identities in combination to inform the theorization of acculturation.

### ***Acculturation strategies***

*Acculturation strategy* is the key concept applied in this paper. The literature on acculturation explores the ways immigrant individuals and communities make changes in their in-group culture while in contact with culturally dominant groups (Schwartz et al., 2010). Acculturation strategies are how a minority group and its members choose to adjust their behaviors when interacting with a larger, host society (Berry, 2005). Berry (1997) theorizes there are two important questions when an individual chooses an acculturation strategy: (1) Is maintaining one's identity considered of value? and (2) Is maintaining the relationship with the dominant society considered of value? Based on the answer to these questions, individuals select one of four strategies in Table 1.



Table 18. Acculturation strategy

		Is maintaining one's home-culture identity considered of value?	
		No	Yes
Is maintaining the relationship with the dominant society considered of value?	Yes	Assimilation	Integration
	No	Marginalization	Separation
(Berry, 1997)			

In Table 1, *assimilation* is the term which describes when an immigrant constantly seeks to build relationships with the larger dominant culture at the expense of maintaining their home-culture identity. When an individual tries to uphold their home cultural values whilst also adopting aspects of the dominant cultural values, that implies *integration*. When one wishes to keep their home cultural values and reject the values of the host society, that strategy is defined as *separation*. Finally, a person may choose *marginalization* if they reject both their own culture and the dominant culture. More recent research has recognized that immigrants who apply integration strategy, sometimes referred to as biculturalism, tend to experience less stress, better adaptation (Berry, 2005), and have better opportunities to complete tertiary education (Nekby et al., 2009).

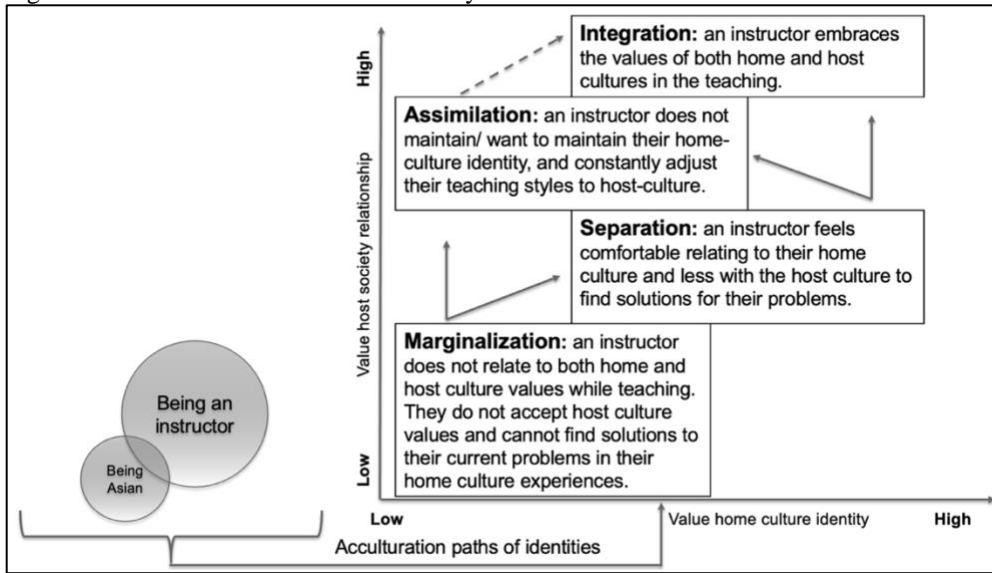
Also, per Berry (2005), these acculturation strategies from immigrants also correspond to the characteristics of the dominant community. The pairing of immigrant acculturation strategies and dominant community characteristics is as followed: A *melting-pot* dominant community enforces change, and it is theorized that the assimilation strategy will be adopted among immigrants. In a community that does not engage immigrants (*exclusion*), they marginalize. When immigrants are divided from the larger society (*segregation*), they separate. A *multicultural* community facilitates the existence of various cultural values, and in this environment, immigrants integrate. The

concepts in use here (marginalization, separation, assimilation, integration, melting-pot, exclusion, segregation, multiculturalism) are descriptive from a bird's-eye view.

The terminology used in this paper are defined in relation to acculturation theory. While most often they share the meanings with popular understanding, there are some notable differences. For example, “a marginalization instructor” is a person who adopts the marginalization strategy to acculturate. This term does not indicate a “marginalized instructor” who is detached from their surrounding environment. A marginalization instructor may well be involved with teaching and learning activities within a department, but they do not internalize any connections with the environment. It is also worth noting that when applied to the IGI population, the dominant community that requires their acculturation is a more bounded environment, in this case the university or academic department.

In Figure 1, I propose a framework of acculturation strategies as IGIs develop into the role of instructors. I theorize that acculturation is non-linear and will ideally lead from marginalization towards integration. In this figure, the level of values one put into relationship with host society is presented on the vertical axis, and those with home society is on the horizontal axis. Accounting for the characteristics of the host environment, this framework contends that the reasons for a person to adopt one strategy instead of another is determined by both their own identity and environmental factors.

Figure 2. A framework of Instructor Identity acculturation



In figure 1, on the left-hand side of the framework are the identities to be analyzed – being an instructor and being Asian. On the right-hand side, I present a modification of Table 1 which depicts an upward path from marginalization towards integration -- the strategy of most successful immigrant groups. As IGIs start their teaching, it is hypothesized that they will typically adopt a marginalization strategy. A marginalization instructor usually references back to their home cultural values and experiences while teaching, but they are likely to observe discrepancies with the host culture and do not have clear solutions to handle teaching situations within the host culture. From here, there are two potential paths for marginalization instructors to move towards other acculturation strategies. IGIs may grow to become separation instructors or transition to assimilation. A separation instructor still refers to their home cultural experiences while teaching, which helps them devise solutions to problems they encounter within the host culture. An assimilation instructor takes a more practical approach, they adjust themselves to the teaching styles of the host culture and become comfortable applying the host cultural values in various teaching situations. Finally, at the most advanced stage of

acculturation are integration instructors – those who embrace both home and host culture and can confidently teach in an American classroom with a different cultural background.

Note that, first, this conceptual framework is observed in the host culture environment (a U.S. university). Therefore, a higher level of adopting the host values is potentially helpful for an instructor to navigate their teaching. Another caveat of this framework is that it does not consider other identities that an IGI may have, such as being a student, a part-time worker, a scientist, and so on. Also, the path from assimilation to integration is not assumed, and thus presented by a dashed line because this link appears to be theoretically possible, but it is not yet supported by any current research and my findings.

## **Methods**

### ***Research design***

This study follows a qualitative research design that uses narrative inquiry methodology (Josselson, 2011, 2013; Riessman, 2007) for data collection and analysis. The key feature of narrative research is the assumption that human beings learn and pass down knowledge in the form of stories (Clandinin & Connelly, 2000). According to Clandinin and Connelly (2000), a story is bounded within temporality (when an event happens), people (who are involved), actions (what they do and what tension is created), certainty (is it causation from the storytellers' view) and context. Simply speaking, a person tells stories about certain phenomena or lived experiences, and the narrative inquirer listens and records them. During this process, stories transform depending on the places, situations, and most importantly, the agency of the storytellers.

Depending on the person's level of agency when telling a story, the story can change greatly (Bamberg, 2012). Agency can be described as a spectrum from low (i.e., a victimized position) to high (i.e., heroic position). When a person has *low agency*, they tend to focus on their deficits in certain situations. For example, in a story about acculturation, perceived deficits may be due to ignorance of or resistance against the norms of the host culture. *High agency* is exhibited when the interviewee shares stories which make them appear strong and in control of the situation. Relative to the conceptual framework, it is likely that marginalization instructors will tell their stories with low agency. As their acculturation strategy changes, the level of agency they demonstrate will increase.

### ***Context and participants***

This research took place on three campuses of a Midwestern public research university – University of Nutachi.<sup>45</sup> Each campus had an enrollment from 20,000 to 30,000 students in about 300-degree programs, as of 2016, and housed over 6,000 faculty and graduate students. Twenty percent of the faculty and graduate students, and 4-5% of the undergraduate students were international. International graduate students accounted for less than 3% of the teaching population.

Nine participants were invited to participate in this study through purposeful sampling from 2018-2020. All participants self-identified as Asian, foreign-born and had undergraduate degrees from institutions in their countries of birth. Most participants were in their third to fifth year of their program and had taught for two to six semesters. Four were invited through emails, one in-person, and four others through mutual acquaintances

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<sup>45</sup> Pseudonym

of the researcher. Except for two participants who worked with graduate students, all others worked as teaching assistants or instructors in undergraduate classes. Each participant came from a different department. In terms of nationality, two candidates came from each of China, India, and Korea; the others were from the Philippines, Vietnam, and Taiwan. Table 2 provides further details about the participants:

Table 19. List of participants

<i>Participants</i>	<i>Year in program; Fields</i>	<i>Teaching before graduate school</i>	<i>Nationality</i>
Neil *	3 <sup>rd</sup> year; Applied Economics	5 years in the Philippines.	Filipino
Chin-sun	3 <sup>rd</sup> year; Policy	2 years in Korea and Germany	Korean
Guang	5 <sup>th</sup> year; Economics	No	Chinese
Mei-ling	1 <sup>st</sup> year; Human Development	3 years in Taiwan	Taiwanese
Hui *	3 <sup>rd</sup> year; Educational Psychology	No	Chinese
Minjee	3 <sup>rd</sup> year; Communication	No	Korean
Neeraj *	5 <sup>th</sup> year; Math	No	Indian
Hong *	4 <sup>th</sup> year; English teaching (ESL)	22 years in Vietnam	Vietnamese
Vanya	4 <sup>th</sup> year; Computer science	No	Indian

\* indicates representative participants whose stories are presented in the findings.

### ***Data collection and analysis***

In-depth, semi-structured interview was the main mode of data collection for this study. Eight out of nine interviews were conducted via video calls between February and December 2020.<sup>46</sup> One was conducted in person in February 2018 as part of an early pilot study. The interviews ranged from 1.5 to 2.5 hours and were recorded with participants' verbal consent. All interviews were in English, except with Hong, whose interview was in Vietnamese -- the researchers' and participant's native language. As neither the interviewer nor the interviewees are English native speakers, I informed the participants

<sup>46</sup> Due to the COVID-19 pandemic and social distancing requirements.

that clarification would be sought after the interview in the case of language ambiguity. Among the participants, I only had follow-up correspondence with Neeraj for clarification. The transcribed texts from the interviews and the researcher's personal analytical memos were used as the primary data input sources (Hatch, 2002).

Data analysis was conducted following Josselson (2011)'s narrative analysis process and Riessman (2007)'s coding techniques for narrative analysis. Josselson (2011, p. 228) provides a roadmap of four steps for carrying out narrative analysis: first, read the transcripts multiple times to identify general themes contained within the answers, which may be communicated directly or "between the lines". Second, identify different "voices of the self", and construct a view on how these voices are in dialogue with one another. Third, organize themes and dialogues into sensible patterns and a coherent unity. And fourth, enter into conversation with theory using those patterns and unity. I explain my methodology when I integrated Josselson's roadmap with steps of thematic and structural coding by Riessman (2007) as follows.

Josselson (2011) notes the first step of narrative analysis is to read the transcripts multiple times to identify the general themes of the answers, those which are directly communicated and those which fall in between the lines. When applying thematic coding (Riessman, 2007), I examined narrative data where "primary attention is on "what" is said, rather than "how", "to whom" or "for what purposes." (pp. 53-54). I identified the contexts and actions in the stories (Clandinin & Connelly, 2000). I read through the transcripts and my notes for each interview multiple times to determine in the interviews whether home culture or host culture contexts came up more often and why. An example of a home-culture context is when participant Hui shared her reflections on a

conversation with a Chinese friend. She described a thought experiment where she imagined how she would have felt if she had taught a class of Chinese students, rather than American students. Hui had simply meant to draw out her strengths and weaknesses in teaching, but tellingly she established the story of her teaching experience in the U.S. in comparison to a home-culture context. This showed her strong connections with her home culture. If a pattern like this was repeated throughout the interview, I roughly positioned this person towards the lower end of host-culture values and higher end of home-culture values to relate to the acculturation boxes. This is aligned with the first step in Josselson's method.

The second step of narrative analysis, per Josselson (2011), is to identify different "voices of the self" and form a view on the dialogue between these voices. To operationalize this, I applied structural coding to find the different voices embedded within the narrative. Riessman (2007) proposes that a story consists of six components: An abstract summarizes the story. Orientation is a few sentences for description of time/ place/ characters/ situations. Action includes the event sequence, or plot, usually containing a crisis or turning point. Evaluation is where the narrator steps back from the action to comment on the meaning or emotions that he/she perceived while engaging in the actions. A story may have more than one evaluation section. A resolution presents the outcome of the plot. A coda is the ending of the story when the narrator brings the action back to the present. (p. 92). Different voices of the self can be found in the orientation and action components; and the evaluation component is where the voices enter into dialogue with one another. I combed through the manuscripts to formulate the stories, looking for the six components to connect them together into a cohesive story. 109 stories



were constructed in this process.<sup>47</sup> All extended quotes presented in the findings section are structurally complete stories. The use of structural coding increases the perception of nuance and adds variation into the identified themes (Riesman, 2007, p. 90).

During the third step is when themes and dialogues are organized into sensible patterns and a coherent unity (Josselson, 2011). I re-evaluated the stories to identify the strategy the person adopted (i.e., marginalization, separation, assimilation, and integration). I made adjustments to the rough positioning (in step one) and located the individual at a particular stage of the acculturation process within the conceptual framework. I also attempted to recognize the agency hidden between the lines. I selected stories to support my writing at this step.

Finally, to “enter into conversation with theory using those patterns and unity” (Josselson, 2011, p.228), I took a step back to look at all the participants, in order to compare and contrast their stories to identify the common and different characteristics among them. These characteristics inform the literature on international and foreign-born instructors and suggest new insights to interpret the responses by this group when observed in prior research.

### *Positionality*

Studying Asian IGIs helps me leverage my personal identity as an Asian IGI myself. While talking to the participants of the research, I did not come across only as a researcher. Rather, I established the impression that the interviews were merely conversations between friends. To some extent, I am their friend who experienced similar, yet different, stories as they do. Minjee and I both knew how irritation growled

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<sup>47</sup> An example is in the Appendix table A-1.

inside us as students giggled while we were talking in class. Neil and I both had the gut-wrenching feeling when students walked out of our classroom, banging the door behind them. We shared the first-hand experience of students discounting us because of our accent (Chiang, 2016), or describing us as “cute” or “little” (Fitch & Morgan, 2003). I also understand their home culture, which saved them from explaining and freed up more time for storytelling and reflection. Studying other Asian IGIs as an Asian IGI helps me develop a close connection to my participants (Kelley, 2020). However, I want to emphasize that the conceptual framework can be used to study other international or immigrant populations when they navigate among multiple identities concurrently while acculturating.

### **Findings**

Overall, participants exhibited each of the four acculturation strategies. Four IGIs (Neil, Guang, Mei-ling and Chin-sun), who were teaching their first or second class at the time of the interview, are categorized into marginalization strategy – the stage where they had disengaged with their home culture but had not yet adopted the host culture values. Two IGIs (Hui and Min-jee), who appeared to be receiving more informal support from helpful professors, were to adopt the separation strategy. There was only one assimilation instructor (Neeraj), who became very experienced with situations in both face-to-face and virtual classes. The integration strategy was adopted by the last two instructors (Hong and Vanya), who had over 20 years of teaching experience or had been working in highly socialized and supportive environments.

As research shows that immigrants who adopt the integration strategy are more likely to be successful (Berry, 2005), these findings suggest the academic environment

may not be fully welcoming and inclusive for foreign-born instructors to grow to the highest level of acculturation. In this section, I provide close analyses of four representative informants with supportive evidence from other IGIs in the same category, following suggestions by Josselson and Hammack (2021, p.66).

***Marginalization instructor: “Students are gauging me.”***

Marginalization instructors are those who are still finding the right balance between their home culture and host community. These instructors refer to their home culture values and experience often, but that does not help them find solutions to their teaching in the dominant culture. Neil, a Filipino male instructor with five years of teaching experience, may have found himself in such situation when he started teaching in the second year of his doctoral program. When I talked to him, he was in his second semester of teaching. In the previous year, when the department could not fill a teaching position with a faculty member, they assigned the class to him given his teaching experience before graduate school. This year, he was more prepared, and he also had a teaching assistant. Working as a substitute and a first-time teacher, he did not mention any formal or informal support from the department. As far as the semester went, he did not attend any training on teaching or cultural awareness. He pondered where to get informal help, but it was not easy to find. Those in the teaching team were all faculty members and he was not close to them, while his peers with whom he could be more casual did not teach. He approached the teaching coordinator for logistical advice, such as how to get his hand-outs photocopied, but they spoke little about “how to teach”.<sup>48</sup>

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<sup>48</sup> Interview dated February 19, 2020.

Although domestic graduate instructors may face a similar experience the first time they teach, it is more nerve-wracking for international instructors.

Twice a week, Neil stood in front of a large classroom with over 60 students, mostly male white American, and lectured Agriculture economics. “How did he feel?”, I wondered.

*At first, it was quite shocking because I was not really used to handling big class. Before when I was still teaching in the Philippines, my regular class size was just 20 to 30. Twenty to 30 undergrad students, before coming here. But considering they were all Filipinos, of course, so I can easily relate. But now, I have to handle a big class in a different culture, it was quite shocking. So, when I did it the first time, I'm quite intimidated (laugh), it's kind of scary...at first. And then when I was already there, and then you know, when you get to know a little bit of the students, it seems fine, and you know, you just have to start to work your way with that.*

In a short answer, Neil described his feelings about the first few classes with different adjectives. They were “quite shocking” (two times), “intimidated” and “scary” before “it seems fine”. He related back to his work experience in the Philippines where he had smaller classes and students who shared his culture. Without proper cultural preparation, it came naturally to Neil to rely on his experience to navigate. However, he did not think that he had managed to find the best approach to teaching yet, because he was still left with many questions – about how to implement his authority and how to build an engaging environment in class.

*So that was one of the culture shocks for me (laugh). Because during the first time I taught, and then in the first day, first session, it was quite difficult for me to interact with them, and it felt like I was kind of intimidated because there were a lot of them, and they can, you know, just say whatever they want. And, you know, it's like... I have this feeling like they are gauging you, like they are trying to measure you, (laugh) you know. It's like they are trying to test you (laugh) if you are credible or not. So, during my first day it was like that, and then until I gave them the first exercise. (laugh) [...] So, with that exercise, they found out that the course is really difficult, and they need to ask [me]. When they found*

*out that the course is difficult and they don't have anywhere to go to, then they can't really understand that unless they ask me. So, with that, you know, you get to build the relationship when people ask you. So... Interestingly, from then, it feels like I kind of gain their respect.*

Neil is typical of novice instructors who are transforming into an instructor identity. He was confident with his knowledge of the subject and trying his best to deliver the lectures, however, he felt he did not receive the response he expected from students. He thought students were skeptical of his knowledge, and therefore, did not engage with him until they really needed to. As mentioned above, marginalization instructors are likely to tell stories with low agency, and that affects their evaluation of situations. Students in American classrooms are used to talking freely; they also ask questions, some of which can be provoking (Wang, 2021). Neil might have known about this difference between American and Filipino classrooms, but he did not know how to handle it during his first teaching assignment.

The low-agency voice faded when students started connecting with Neil for support on their first assignment. He realized that giving them exercises helps with students' performance in class, whilst simultaneously strengthening his authority with students. He slowly gained more confidence in interacting with students but his lingering reflection on authority and its role in his instructor identity remained, which signals the active imprint of his home culture on Neil's instructor identity development and acculturation to U.S. academic culture.

Marginalization instructors, like Neil, frequently refer to their prior teaching (or learning) experience in their home country to interpret events in American classrooms, however, they often fixate on the differences. Mei-ling, a first-year Taiwanese instructor from a Human Development program, pointed out that language issues made her worry

the most. She was also nervous about interacting with students in such an intimate environment as “office hours” – which is unlike anything she was used to in Taiwan. *“I like it better that students email me than coming to office hours. I just feel so nervous that I wish every time that nobody comes.”*<sup>49</sup> Similarly, Guang – a fifth-year Chinese instructor of Economics, shared that he wanted to use humor and music in class, but he did not think he understood the politics enough to do so. *“Like for example, some professors will play some music, or videos at the end of their lecture. But you know, those videos and music are econ-related, and the lyrics are made up, and people can understand. I didn’t know those politics or interesting things so I couldn’t use that in my lecture. I don’t have the background to understand those.”*<sup>50</sup>

Marginalization instructors were often overwhelmed with the feeling of being judged, which coincides with their low agency in their relationships with students. The acculturation process, therefore, was recalled with more negative stories than positive ones. In Neil’s stories, he talked to himself with a constant judging voice. He believed that students were “measuring” him (whereas, in reality, perhaps they were just trying to understand the lecture content), that students walked out of the room because they were not interested (they may have had other commitments). Chin-sun, when receiving complaints from students about her harsh grades, felt like she was “an evil person.”<sup>51</sup> Mei-ling thought she made a mistake in a comment to students and was “frustrated.” Instructors with a marginalization strategy have yet to fully accept the dominant culture values but they are aware that their home culture values may no longer be appropriate to

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<sup>49</sup> Interview dated October 16, 2020

<sup>50</sup> Interview dated August 1, 2020

<sup>51</sup> Interview dated February 1, 2018

guide their actions. In this study, most marginalization instructors (three out of four) had a few years of teaching experience prior to graduate school. Such experience can become an asset to a department if they are coached closely; otherwise, instructors may face shock and intimidation, as Neil did, and their teaching effectiveness may be affected.

***Separation strategy: “If the students were Chinese, would I feel the same?”***

Immigrants who adopt separation as their acculturation strategy are those who appreciate their home over the host culture values while living in the host society (Berry, 1997). They often rely on their home culture values to resolve situations in their teaching. Through their narratives, Hui and Minjee – the two separation instructors in this study – showed that participants’ international status, when used tactfully, can become an asset for educational purposes.

At the time the interview was conducted (May 19<sup>th</sup>, 2020), Hui was a third-year graduate student in Counselling Psychology. Like Neil, she encountered overwhelming feelings when she started teaching. In her first teaching assignment, she perceived the class atmosphere was “weird”, but she did not know why. She thought she did something wrong and “had a lot of self-blame”. She asked the course coordinator to sit in for a session to solicit their suggestions. However, the advice did not work. The turning point came later in the semester when she realized that students were interested in her as a person: how her life in China was different from theirs, how she settled and got used to life in Nutachi. Hui used her cultural background as a tool for engaging with American students and for making sense of classroom interactions. Hui found that “self-disclosure” – defined as openly sharing some personal experiences with her students (her word) – was a helpful technique to win students’ favor and draw their attention.

*But I believe I have my own advantage (laugh). I kind of interview lots of people that actually if you have an international instructor, all they want to know is how does it look like to live in your country, what is your culture about, how can it help them understand their future, what is the local life, [and how] to live in a foreign country. They want to know more about you, so I think self-disclosure in the class can be helpful, try to introduce some diversity concepts that could be helpful. And it actually can help students to know you better to feel less intimidated, and to have less stereotypes at the same time.*

*[I told students about] my interesting experience in the U.S., like funny stories and jokes. I remember the first time was about ketchup. I don't know why ... because we Chinese, we don't say ketchup, we say tomato sauce. So, when I first said, "Can I have some tomato sauce?" the waitress was like ... seeing an alien and doesn't understand what I talk about.*

Hui started her conversations with students using everyday stories or, occasionally, slightly self-deprecating jokes as a lead-in. As a result, the class atmosphere became more friendly and open. That was when students began to feel more comfortable sharing about themselves and asking questions during her lessons.

For Hui, sharing personal stories that highlight the different cultural backgrounds is an effective mechanism to build the image of an approachable and friendly instructor. Informed about diversity and inclusion, Hui took advantage of the more open atmosphere to lead students through some informal but practical discussions on cultural diversity. This approach enabled her to use her international status as a strength rather than a weakness. Minjee, the other instructor from Korea, also applied the same techniques to share more personal stories about cultural differences. Such experiences as being asked to show an identity card when buying a movie ticket or drinks are used to create a friendly image of a person who is getting to know the America as the students know it.<sup>52</sup>

Beyond the use of personal stories, separation instructors still reference back to their home culture values during their reflection, though they manage to relate more

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<sup>52</sup> Interview dated September 8, 2020.



closely with the host culture to find a way to acculturate. Hui told me about her thought experiment:

*I got a friend. I helped her for her first teaching experience, that makes me reflect on my own teaching first time. As a second language speaker, we always feel nervous when speaking in front of a large group. And I asked her, and also myself, if you are not talking in front of a group of American students, if you just talking with a bunch of Chinese kids, would you feel the same way? Would you doubt yourself? Your teaching skills, your confidence, your presence in class. No, you won't. [...] This experiment helped me to recognize which aspect of my life could be the problem. If the language is the problem, or the teaching skill is the problem, or you are not really familiar with the contents. And with some experience varied like teaching in the past, I recognized that it was not my teaching skills, it's not about my performance, but it's more about my language.*

This thought experiment showed how Hui referred to her home culture to find the answer to a host culture situation, which is reminiscent of Neil. What makes her different from a marginalization instructor is that Hui compared her current situation to a similar experience in her home culture, but she recognized the discrepancies and figured how to resolve them. Separation instructors compare cross-cultural experiences to find a way to move forward. With this characteristic, separation instructors usually told their stories with higher agency than those with a marginalization strategy.

Another common theme among separation instructors in this study is their preference for learning from role models. Hui and Minjee recalled their learning experiences with professors vividly, both as students and as teaching assistants. Hui loved working with two female professors. She learnt to prepare carefully for class; to be attentive and respectful to all students, especially those who were quieter. Observant as she was, Hui pointed out how different her experiences with the two beloved professors were from her interactions with others who made her feel “invisible”. She recalled about one of her favorite professors: “*You know, counseling always has sensitive topics (laugh)*

*and Dr. B handled it very well, even as a teacher. Sometimes, I can see she was really tired but still really care about students, I can see her passion. So sometimes if I cannot continue, I can just think of her. I think OK, so she can do that I probably can do that, too.*” Note that the influential professors to Hui shared her gender identities, which confirms prior findings of the connection between student-instructor shared identities and students’ academic performance. Minjee admired the way her main instructor responded to students’ emails – strict and convincing at the same time. She also learnt about how the main instructor stood by his teaching assistants’ sides in cases of student complaints. These learning behaviors of separation instructors suggest a form of close-supervised assistantship or practicum in a teaching context to be an effective training model. Moreover, this also means an environment where mentorship and other forms of one-on-one support are available will be likely to accelerate IGIs’ acculturation process.

***Assimilation instructors: “When I see students listening, I am more confident.”***

When we talked in Summer 2020, Neeraj was a fifth-year doctoral student from India in the mathematics department. He came across as shy and sometimes stopped to ponder during the interview. He answered my questions with a slow-paced voice. At times, he appeared to be with his own thoughts and reverted to answering the previous question after we had already moved to another one. Neeraj was the most senior participant in my study and had more teaching experience in the U.S. than others.

Neeraj had been teaching since his second year as a Pre-Calculus teaching assistant. The mathematics department is very serious about undergraduate teaching, so Neeraj and other peers received formal training before the start of their teaching semesters. It was a one-week teaching camp where all participants learned to prepare

lessons, conducted mock lectures, and received comments from other instructors. The camp was helpful to Neeraj in many ways. For example, he learned how to write on the blackboard, how to move around the classroom, how to project his voice to draw students' attention, and also how to pronounce certain math words (" *$\beta$  is pronounced as be[i]ta not bee[i:]ta*").

After the camp and into the real world, Neeraj faced comparable issues to Neil and Hui. He had similar worries about his first teaching assignment and interactions with students. Like Neil, he liked feeling helpful when students asked him about difficult assignments, which later made the class atmosphere more enjoyable. Like Hui, he recognized his English as a barrier to teaching, and he took English classes for international instructors on campus to work on his language ability. Furthermore, thanks to the many teaching opportunities available to him, as every undergraduate student had to take math, Neeraj rapidly improved his teaching abilities. He gained experience through teaching online and offline, working with advanced students and students on probation. To maintain high teaching standards, he also watched online videos to learn how effective instructors taught and observed classes by his colleagues.

Throughout Neeraj's stories, he referred to the experience and support that he received when in Nutachi as the main resource for his teaching. Rarely did he mention his time in India. When prompted, he either pointed out the similarities between Nutachi and his bachelor classes (e.g., writing theorems on a blackboard) or made it clear that he preferred how it was done in Nutachi. Neeraj did not allow himself to get hung up on the cultural differences between American and Indian classrooms. Instead, he was comfortable leading his classes in the ways instructors do in Nutachi – which he was

trained in teaching camps, various classes on campus, and through observing peers.

Therefore, even though Neeraj shared a comparable experience with Hui and Neil, he made sense of class situations and chose his actions by leaning more on the host culture values.

*[Since I came here] I learned that interaction is very important for students, and also in terms of organization and everything. Because I mean the classes I took back in India, some professors try to make it interactive, but as a student, I never bothered to actually participate in the class which I regret now because I see that. Like in graduate classes now, I ask a lot of questions and try to interact with the professor, and I see I learn much more by actually asking questions in class and participating in class. That's something that I learned is very important for a student as well. I learned that interaction is very important for students, and also in terms of organization and everything, I would say that Nutachi and American courses are much more organized, compared to Indian courses. We have this course page set up, and all the homework are there. If students want, they can even work on future homework, and they have their syllabus, and I think those things are really important to have everything clear. Clear grading policy. I mean in India, some professors do that, but some of them don't really that sort of thing. Yeah, so definitely organization is something that I see a lot of lectures here do very well, and their courses are very organized, and they have everything. Actually, I even met an instructor and I really learned how they prepare for the class. He, in fact, was going to teach in the fall and he had all the lectures written down, in the summer itself. They are so prepared with lectures for the semester already done. So that's really awesome, they are so organized.*

Neeraj saw himself as constantly in learning mode. He observed classes of other professors and peers, made sense of the roles, and explored different ways an instructor can teach a class. He recognized some differences between his classes in India and those in Nutachi, but these differences only served to highlight that he preferred the way classes were run in Nutachi. When asked about how his home culture affected his teaching, he admitted that his teaching style was formulated in Nutachi. Not having worked before graduate school, he did not have any teaching experience in India. When he attended his classes as a student, he paid more attention to the content of the class,

rather than the instructors' teaching style. Also, being a shy person, Neeraj did not recall himself participating in class activities when in India, even when his instructors initiated. Now, having changed his view on the role of interaction in class, he regretted not cooperating more.

Immersing themselves into the host culture is a characteristic of an assimilationist. They find it comfortable to adopt certain host culture values into their behaviors and embrace them. Neeraj constantly emphasized the role of interaction in the American classroom – something he did not relate to when he was in India. He also managed to translate this idea into various activities and in his conversations with students. Take this story of when Neeraj was in his office hours with an American student as an example. Note that the context of office hours is not common in India (Chiang, 2016), yet he handled it well and managed to help his student to succeed in class.

*I had one student, who at the beginning, he did not even know how to add fractions, but he used to come to my office hours every day, and he frankly told me that he had not paid much attention to math in his high school days, but now he really needs to because he needed a good grade because it's college, or something like that. He was actually from a tailoring background, like his parents were tailors, so I explained the addition of fractions in terms of tailoring. I mean they do a lot of measuring when you make clothes, right? So I was explaining that if you want to add one half plus one third, if you want to measure half and one third using some stick, you want something that is going to do it for both half and one third. So you kind of take the common denominator. So, if you use a stick that is one sixth length, then you can see that measures one half as three of those, and one third as two of those. I started with how to add fractions and he used to come to my office hours every day and it was really good to see that he started picking up these concepts. He used to go to the instructor's office hours also. He really worked hard. I can say that he really worked to change things around, and at the end of the semester he got like an 80 out of 100, which was really good to see.*

In an environment of close conversations with domestic students, many international instructors were nervous and did not perform well as a content expert

(Chiang, 2016, or Mei-ling's story mentioned above). However, Neeraj worked through it smoothly. He welcomed students to his office hours. He created a friendly atmosphere so students could share about their family backgrounds, their education journeys to Nutachi, and their expectations for the class. Based on such knowledge about students, Neeraj creatively customized his explanations to teach new concepts and skills, building on students' familiar backgrounds. This behavior is not typical in an Asian context where instructors have more lecturing and are less likely to customize their instructions to each student (Altbach, 2010).

***Integration strategy: "I attribute half of my achievement to home."***

Integration instructors are those who find the balance between the two cultures. They embrace their Asian identity and make use of that in their class like separation instructors. They are also comfortable with the norms of the American classroom and feel confident interacting with students in different situations like assimilation instructors. Two participants in the study are categorized as integration instructors: Hong, a seasoned college lecturer in Teaching English as Second Language (TESOL) with 22 years of teaching experience from Vietnam; and Vanya, a final year doctoral student in Computer Science from India.<sup>53</sup> The following quote summarizes how Hong transitioned through similar experiences as Neil and Hui, and arrived at her integration strategy:

*[I was very afraid at the beginning because they [students] are native speakers, and that they will judge me. In my 20 years of teaching, I never had imagined I would teach American students. But...] When I started teaching here, I just needed one day to realize that I can address students' attention. I found myself helpful for them, and I saw that there were things that they can ask me. It happened naturally, like when you talk about identity. I transition into the identity of an instructor to my students, and so they should be afraid of me. They should be afraid that*

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<sup>53</sup> Interview with Hong dated July 30, 2020; interview with Vanya dated September 3, 2020.

*I would evaluate them. Even though they are American, but their status is lower than me. I am [a] PhD, I am the instructor, they should be afraid that I may mark them down, they should be afraid that I assign difficult exams, they should be afraid of so many things, why should I be afraid of them. That's what I told myself. And simultaneously, I enjoy my class and because I find myself helpful to them and I find my passion in the contents that I can convey. I can answer all their questions. That means they only focus on what I am speaking. And what I am afraid of is what I am not speaking, and they do not know, and they won't ask about that. If I haven't read that, my students are not likely to read that. Many times, there are presentations on the web course. I was so afraid that I hadn't finished reading. I was afraid that my students would ask. However, I found that students only asked about what I already read, and I was lecturing, and those are what I understand. They asked and as I know it, I can talk to them, and use my old experience. When I taught ESOL and ESOL learners, the American, they are good at their language and culture, I am more understanding about learner diversity, learners' feelings, learners' experience than American teachers here. To some extent, I have my own strength as a professional. To some extent, I have my strength to become helpful. I can see my value as an ESOL professional. My confidence increased. So I find those who are afraid of being judged should be my students, not me. The key is I shouldn't judge them.*

Hong summarized her entire transition process in this long quote. She started off feeling insecure with her international status. Then she had to rely on the hierarchical thought of 'I am the instructor and students should be afraid of me' to gain more confidence. After that, she realized she could be helpful to students. That was when she leveraged her international identity and understanding about ESOL learners to bring out the uniqueness of her lectures. There were similarities between Hong's stories and Neil's as they both had fears when they embarked upon teaching. Sharing Hui's experience, Hong recognized her foreignness as a strength, as her personal stories were inherently interesting to students, and she could discuss diversity more insightfully. The feeling of helpfulness was universal across all participants, and Hong had that realization as well.

Hong's teaching philosophy was inclined more towards the Western view of teaching. She believed that she was an inspirer, she strived to provide instructions to

students on individual basis and she wanted to use technology to boost teaching efficiency. Neeraj shared similar views though he did not articulate it explicitly (e.g., he tried to understand students' backgrounds and found examples that were easy for them to relate with). Neil was different as in his teaching statement, he expressed an ambition that his teaching would one day save lives, which is reminiscent of the teaching philosophy of Asian countries in the past (Tompkins, 1959). If Hong believed that the aim of teaching was to inspire students to learn by themselves, Neil wanted his teaching to have a long-term influence on his students, which put him under pressure.

When Vanya and Hong were placed in the same group, the influence of their fields upon their acculturation strategies stood out. Vanya did not teach before graduate school. During her doctoral program, she taught approximately seven Computer Science courses in different roles (grader, holding office hours, lab instructor). She was confident in her class because English was not the only way she communicated with students. She could use programming languages to fill some certain gaps when needed. Meanwhile, majoring in TESOL, Hong started her teaching with an insecure feeling of how to teach English to English native speakers. Without her extensive teaching experience, it would have been harder for Hong to adopt an integration strategy during the program. This observation is consistent with the findings in prior research that show STEM instructors being more satisfied in their jobs than their non-STEM colleagues (Kim et. al., 2011).

Both Hong and Vanya constantly sought out support from professors and peers. They found their own mentors. Hong requested private conversations with a friendly female professor, asking for her instructions on how to deliver certain teaching tasks. Then, they co-taught a class, and the professor became her dissertation committee



member. Vanya had the advantage of working as a teaching assistant and research assistant for her dissertation advisors. Besides their close work relations in research, she also received mentoring on teaching. In Vanya's department, graduate instructors work in teams, which facilitates socialization among colleagues (Austin, 2002). Integration instructors, like Hong and Vanya, enjoyed their classes more and had less pressure when teaching, which confirms acculturation theory that integration immigrants are more likely to be successful in their life (Berry, 2005). Yet, it is a long path for IGI to reach the stage of integration.

### **Discussion**

These findings highlight that Asian IGIs adopt different strategies to acculturate, which depend on their time in the program, their fields, their departments, and their teaching experience before graduate school. IGIs usually start their teaching with worries and feelings of insecurity, which makes it natural for them to rely on their own home values to move forward. Therefore, it is often observed that IGIs adopt marginalization or separation acculturation strategies when they are new to the teaching job. They are aware of certain norms in American classrooms, such as the high level of student interaction or office hours, but they may not be able to handle the interactions with students naturally. With experience and the kinds of support that they receive (formal training, informal mentoring, or peer socialization), IGIs seemed to become more familiar and comfortable with the host cultural values. Some of them grow toward assimilation or integration. Assimilation and integration instructors appear to enjoy the teaching experience more than the others. This implies that a more culturally inclusive graduate program should be

aware of the transition that IGIs experience throughout the process, which might be different from the efforts to become more racially or gender inclusive.

***International graduate instructors: What do they have in common?***

As presented so far in this paper, IGIs acquire more teaching experience in different ways, which leads them to different acculturation strategies. Their choices of acculturation strategies depend on their home departments, their time in the program, and their experience before graduate school. Besides those, there are four characteristics that are shared universally across all the participants regardless of the strategies they adopt.

First, all international instructors were aware of their language issues. Being non-native English speakers is a disadvantage that can breed a fear of interaction (Mei-ling) and insecurity (Hong). The language issue restrains IGIs from expressing themselves comfortably in class, by using humor and music for example (Guang). Stories of IGIs putting in extra effort to practice English to enable them to have good conversations are found repeatedly in this study, which is consistent with other research on the same population (Chen & Lawless, 2016; Cruz et al., 2018; Lin et al., 2006, among others).

Second, IGIs tended to notice the differences between themselves and their students, a mindset that subconsciously divides them from students. For instance, Neil described how he was overwhelmed standing in front of the class because “*Like they [students] are gauging you, like they are trying to measure you.*” Hui, in her thought experiment, switched the nationality of her students by imaging “*if you just talking with a bunch of Chinese kids, would you feel the same way? Would you doubt yourself?*” Even a seasoned instructor like Hong still told herself “*They [students] should be afraid of me. Why am I afraid of them?*” This mindset remained for a time before fading away when

instructors slowly gained more confidence in engaging with American students. Neil still experienced this when he taught in the second time. Hong was over it within a few classes. Neeraj overcame this mindset after the first year.

Third, feeling helpful to their students gave the IGI's a sense of authority. Neil said he started feeling respected when the first assignment was released. As students consulted him about the assignment, he had the opportunity to talk to them and developed connections. Neeraj shared similar experiences. As he taught more advanced classes, and students had to focus and engage, he enjoyed teaching more. Hong realized she could answer all her students' questions and felt more confident despite her international status. Contrastingly, Hui felt a form of micro-aggression against her when students ignored her and addressed questions to her American colleagues.

I would interpret that the sense of authority in class means to Asian IGI's that they can contribute to students' performance and feel satisfied. The instructors do not mean to use power to influence students' behaviors, rather they want to use their instruction to influence students' learning. There is no coercion in the way IGI's want to interact with their students. I believe, in this case, it is the sense of job satisfaction that is confounded with authority. This is an example of cross-cultural differences. Researchers and practitioners should be mindful when interpreting "authority" in the responses of international instructors in surveys or interviews.

***The contexts of reception (aka. university or academic departments)***

Although this study focuses on acculturation strategies of IGI's, it is worth discussing the contexts of reception which can accelerate or slow down IGI's acculturation. Field specific characteristics are studied and accepted as a factor that affect

international instructors' job satisfaction (Kim et al., 2010), and evidence is likewise found in this study with IGIs. Instructors in STEM fields (e.g., math, Computer science) achieve a higher level of acculturation than those in the social sciences. They usually teach more due to high undergraduate teaching loads, and English language requirements are less demanding than for those lecturing in social sciences.

Next, the level of departmental support is mentioned by all participants, directly or indirectly, as a resource for them becoming more proficient at teaching. Formal support, such as teaching camps and English classes for international instructors, has been acknowledged as contributing to the growth of IGIs in their jobs. Other forms of support, namely mentoring and on-spot-training, are also appreciated by participants. The question which remains, however, is whether the support is well targeted, because IGIs' needs for support change through their acculturation stages. Moreover, the findings in this paper point to the fact that most IGIs remain with marginalization or separation strategies to acculturate, which signal that U.S. academia in general is somewhat an "exclusion" or "segregation" environment.

### ***Theoretical contributions***

These findings confirm prior works on acculturation theory that suggest immigrants who adopt integration strategy are more successful settling in the new culture (Berry, 2005). With regards to graduate student training, my findings resonate with Gorsuch (2012) as she advocates for more teaching assignments for graduate instructors, in terms of both quantity and content, because only with more experience can graduate students improve their skills.

This study contributes to the literature with a conceptual framework that can be applied to study IGI of different cultural groups. Given that the instructor identity of an IGI is nested with their ethnic identity, the dynamics of the two identities are revealed in the acculturation strategy an IGI adopts. With an understanding of IGIs behaviors, departments and university administrators can design more targeted training programs which suit their learning preferences.

In a broader context, this conceptual framework can also explain immigrants' behaviors in the workplace when they adopt a work identity (in this case, instructor) and balance it with their ethnic identity to acculturate in a work environment. A possible critique of this conceptualization is the unclear definition of "Asian ethnicity". I acknowledge that the Asian identity can encompass a wide range of countries and ethnic groups with different beliefs, behavioral norms, and customs. Not seeking to generalize the personal experience, the narrative inquiry methodology aims to bring up the individual stories and personal reflections of each foreign-born participant who self-identifies as Asian. Together, their stories contribute towards the general understanding of how immigrant instructors acculturate from a personal perspective.

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## APPENDIX

Table A- 7: Example of a story and steps of analysis

Transcript	(Step 2) Structural analysis	(Step 2) Agency	(Step 3) Voices	(Step 4) Cross-case notes
Neil's story: Muddling in the dark to find a way to connect with students				
Q: How do you describe your interaction with the students? Like you know, how do you interact with them and how do you think they respond to you? A: So... yeah, that was one of the culture shocks for me [laugh].	AB			
Because... uhm... when... during my first... the first time I taught, and then in the first day, first session, it was quite difficult for me to interact with them, and it felt like I was kind of intimidated because there were a lot of them,	OR			
and they can, you know, just say whatever they want.	CA			
And... you know... it's like... I have this feeling like they are gauging you, like they are trying to measure you. Q: Really? A: Yea. [laugh] you know... yea... it's like they are trying to test you [laugh] if you are credible or not.	EV	Low agency: Neil still taught the class he was assigned. However, he put himself at the position to be judged	A judging voice told him that students were measuring him, gauging him.	Similarly, Hong, a seasoned instructor, was also struggled with the judging voice. However, it took her much less time than Neil to get over it => The role of exposure to teaching and experience (Gorsuch, 2002)
Q: What year are they? A: There were a lot of freshmen, a lot of sophomores, quite a little bit of junior level. Q: Ok, so like mostly freshmen? A: Yes, mostly freshmen.	OR			
Yes, so at first, it was... yeah... during my first day it was like that, and	OR		The judging voice continued...	

Transcript	(Step 2) Structural analysis	(Step 2) Agency	(Step 3) Voices	(Step 4) Cross-case notes
then until... until I gave them the first exercise.				
so when I gave them... it's the same actually during my second time this semester, so we don't have much interaction until our first exercise.	CA			
So with that exercise, they found out that the course is really difficult and they need to ask [questions].	RS	Agency higher: he can start being helpful to his students. He can put his expertise and knowledge into good use.		
So when they found out that the course is difficult and they don't have anywhere to go to, then they can't really understand that unless they ask me.	RS			
So with that, you know, you get to build the relationship when people ask you. So... : Interestingly. Yeah... so from then, it feels like... from then on, I kind of gain their respect.	Coda		The judging voice faded when Neil felt that he was helpful to his students.	Hong and Neeraj also shared similar feelings. It appears that, as they can have space to express their competence, it boosts up the sense of authority among IGI's.
Note: AB: Abstract; OR: Orientation; CA: Complicated Action; EV: Evaluation; RS: Resolution.				

## VITA

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