Identifying the Different Behaviors and Needs of Immigrant and Language Minority Students at Public Four Year Higher Education Institutions

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Abstract

This paper uses data from the 2000 National Postsecondary Student Aid Study (NPSAS:2000) and the 1996 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine some behaviors and outcomes for immigrants and/or students who spoke a primary language other than English as children as compared to those of other citizens and English only speakers. We pay special attention to differences in these populations at public four-year institutions in large cities versus those in other locales.

Preliminary research into the populations of public urban four-year higher education institutions indicates that these institutions have much higher proportions of immigrants and students who spoke a home language other than English as children than do other public four-year institutions. In this paper, an Immigrant is a naturalized U.S. citizen or a non-U.S. citizen who is a permanent resident of the United States. Immigrants will be compared to Other Citizens, who are defined as native born U.S. citizens. We refer to the comparison group as Other Citizens to emphasize that many in the Immigrant group are citizens of the United States. Non-Resident Aliens, also known as International students, are not included in this analysis. Students who spoke a home language other than English as children are referred to as non-native English speakers (NNSE) in this paper. This NNSE classification is not intended to describe the respondent's facility with English, only the home language as a child. Students who indicated that as children they usually spoke English at home are identified as English Primary Speakers (EPS) throughout this paper. Those who reported American Sign Language as the home language are not included in either language category.

This paper uses data from the 2000 National Postsecondary Student Aid Study (NPSAS:2000) and the 1996 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) to examine the relationship of Verbal SAT scores, student living arrangements, and remedial course-taking to several measures of success. It examines differences in these behaviors and outcomes for large city institution populations compared to those of other public four-year institutions, with particular attention to

immigration status and language usage. We measure success several ways. Retention means returning to the first institution for the second year. Persistence means being active at the first institution in the third year, remaining active in the third year (1998) at any postsecondary education (PSE) institution, or being enrolled anywhere in PSE at the end of the data collection (2001). Our last success measure is attainment which is having a bachelor's degree from any institution by the end of data collection (2001).

This paper provides a few examples of differences between Immigrants and NNSE students as compared to Other Citizens and EPS students and discusses some of the implications of those differences. It is a small extract from a more comprehensive study.

Literature Review

Tinto's (1993) Student Integration Model proposes that retention and persistence is positively related to the ability of the student to leave his or her previous life and become integrated into the academic and social life of the higher education institution. In this model, successful students respond to the institution's commitment to them by leaving their previous communities and becoming committed to membership within the institutional community. A competing model is Bean's (1980) Student Attrition Model which proposes that students leave school for many of the same reasons that employees leave work organizations and that institutional commitment is a primary factor for both men and women. Bean's model deals more explicitly with background characteristics such as prior academic performance as measured by ACT scores and/or high school GPA, and socio-economic status. Cabrera and colleagues (1992, 1993) did not find these two theories to be incompatible. However, they believe that institutional commitment means somewhat different things in the two theories, and that while Tinto supposes a commitment to the institution based upon competent social and intellectual membership in the community of the institution, Bean's concept of institutional commitment might be better characterized as institutional fit.

A major problem with both theories is that they deal only with traditional four-year college students. Indeed, Bean tested his model with a sample that was made up exclusively of White non-Hispanic, U.S. citizens, under the age of 22, single, first-time, full-time freshmen in their first semester. He also biased the sample towards higher achieving students as measured by ACT scores, with only 2 percent of the subjects coming from the lowest quartile. Brower notes that the traditional integration concept was designed to explore the interactions between student and institution but that the existing instruments measure only the conformity of the student to the "goals, values, and ideals of the university." He then states that their performance "depends on how they establish a niche in the university based in part on their own perceptions, goals, choices, and actions" (1992, 444). In this, Brower acknowledged that students may have their own lives outside of the academic community.

Many of the accepted models find SAT scores to be positively related to retention, persistence, and attainment. Tinto (1993) used combined SAT scores as an indicator of institutional selectivity where institutions with higher mean SAT scores are expected to

have significantly higher retention rates. Aitken (1982) reported that both Verbal and Mathematics SAT scores were significantly and positively related to academic performance. More recently, Astin and Oseguera (2005) reported that the percentage of students who receive bachelor's degrees within four years, six years, and 6+ years was positively aligned with composite SAT scores. In addressing SAT scores, none of these studies specifically addressed the relationship between those scores and the immigration or language status of the students taking the tests.

The student's living arrangements are also often part of a retention model. For instance, Bean (1980) found that male students were less satisfied if they lived with parents and that lower satisfaction levels contributed directly to attrition. Astin and Oseguera have found that "another factor that increases a student's degree attainment is living in a campus residence hall during freshman year" (2005, 27). They go on to suggest that institutions that require freshmen to live in dorms should be expected to have higher degree completion rates than would be expected based on other factors without the housing variable. This conflicts with current assimilation theory in which Portes suggests that maintaining close family connections is more likely to lead to higher educational attainment because "immigrant youth who remain firmly ensconced in their respective ethnic communities, may, by virtue of this fact, have a better chance of educational and economic mobility through access to the resources that their communities make available" 1995, 251.

Where Tinto sees a feeling of competent citizenship in a particular institutional community and Bean's view may be characterized as institutional fit, institutional commitment may be most strongly related to proximity to family and community for immigrant populations, particularly if the language used in the family home is not English. If current immigration and assimilation theory is correct, rather than encouraging students to break completely away from parents and the old neighborhood and become fully integrated into the life of the institution as Tinto's Student Integration Model would suggest, institutions that serve significant immigrant populations should be encouraging them to maintain those ties and might expect higher retention and persistence from those Immigrant and NNSE students who do.

Portes and Rumbaut (2001) note that the ability of immigrant youth to maintain contact, goals, and values with parents is more likely to lead to consonant acculturation where both generations can develop a sense of assimilation into the new culture. The ability to simultaneously maintain contact not only with family but also with a sizeable community of co-ethnics may lead to an even more positive outcome—selective acculturation—where these youths develop a sense of acculturation into the new culture without abandoning the old. Both consonant and selective acculturation are more likely to allow these immigrants and their children to avoid downward assimilation in which immigrant students identify with an existing underclass and aspire to the goals and attitudes of that underclass (Portes and Rumbaut 2001; Portes 1995).

The fact that high proportions of the immigrant populations are members of minority groups also complicates the assimilation process. Portes and Rumbaut (2001) believe

that selective acculturation with maintenance of contact with a sizeable co-ethnic culture can help to insulate immigrant youth from the effects of discrimination. This is accomplished because racial discrimination is "filtered through ethnic networks and confronted with family and community support" (Portes and Rumbaut 2001, 63). In discussing West Indian immigration to the United States, Waters writes, "For today's second generation, staying 'ethnic' and resisting certain kinds of Americanization can be the key to upward social mobility"(1997, 197). Gray and colleagues (1996) also note that for immigrants, peer support may help alleviate acculturative stress.

This means that Tinto's student integration model and Bean's idea of institutional fit should not work for immigrant and second generation populations as well as it might work for native born U.S. citizens and English speakers who are further away from the immigration experience. The cost of leaving family and community behind to establish oneself in the academic community is simply too high for the Immigrants.

Data and Methodology

The data used in this study come from the restricted data sets for the National Postsecondary Student Aid Study of 2000 (NPSAS:2000) and the Beginning Postsecondary Students Longitudinal Study of 1996 with follow ups in 1998 and 2001 (BPS:96/01). The BPS:96/01 is based upon the 1996 National Postsecondary Student Aid Study (NPSAS:1996). We restricted our analysis only to the behaviors and outcomes of those students who began PSE at public four-year higher education institutions and were residents of the United States.

The location of the institution each student first attended is identified as either Urban, which means that it is inside a city with a population of 250,000 or more, or Other Locale which means that the institution is located anywhere besides these larger cities. The relatively small numbers of Immigrants and NNSE students with complete information often makes using the Urban/Other Locale category, in addition to the other variables, problematic because of standard error considerations.

The limited number of observations that we have available for analysis, along with the fact that many of them are missing data, makes using sophisticated multiple regression models also problematic. Therefore, we will generally be using relatively simple difference of means tests between the various categories made up of the locale, immigration status, and language variables along with various behavior and success variables.

Results

Verbal SAT Scores

We focus on Verbal SAT scores because of the language issues and note that we found few differences between groups for Math SAT scores. Based upon the retention literature, we would have expected Verbal SAT scores to be positively related to success. If we looked only at the results for the group as a whole, that is what we would

have found. However, we found that the relationships between various success measures and Verbal SAT scores were very different for Immigrants and Other Citizens.

There was virtually no difference in Verbal SAT scores by Locale. However, Immigrants and Other Citizens have means that differ by 54 points. Immigrants who attended Large City institutions and spoke a language other than English as children had much lower mean Verbal SAT scores than other groups. The key question is whether Verbal SAT scores have the same relationship to success for all of the groups. Details of the mean Verbal SAT scores by immigration status, locale, and language are presented in Table 1.

Table 1: Mean SAT Verbal Scores by Immigration Status, Locale, and Language Status

	Mean	Std. Error	95% Conf. Interval	
All	441.6	3.761	434.163	448.988
Other Locale	441.4	4.160	433.213	449.612
Urban	441.1	11.276	418.920	463.371
Other Citizen	444.4	3.889	436.749	452.082
Immigrant	390.1	9.379	371.571	408.544
EPS	446.7	3.895	439.013	454.368
NNSE	376.9	9.001	359.163	394.647
Other Locale, Other Citizen, EPS	445.2	4.339	436.697	453.802
Other Locale, Other Citizen, NNSE	378.9	14.654	350.025	407.793
Other Locale, EPS	429.7	18.628	392.938	466.374
Other Locale, Immigrant, NNSE	379.0	10.254	358.790	399.212
Urban, Other Citizen, EPS	456.6	10.632	435.672	477.587
Urban, Other Citizen, NNSE	407.2	32.851	342.461	471.969
Urban, Immigrant, EPS	414.2	36.439	342.348	485.999
Urban, Immigrant, NNSE	336.7	20.417	296.485	376.973

The first measure of success we used was whether the student returned to the first institution for the second year. There is some sentiment that says that higher education should take a "value added" approach which means that staying at a single institution is not important, and that if a student gains knowledge at the first institution and then transfers to a second, that is also a form of success. That may be true, but it does not mean that staying at the first institution is not a better outcome. Pascarella and Terenzini believe "institutional continuity in one's post-secondary educational experience not only enhances degree attainment but has additional positive implications for early occupational and economic attainments" (1991, 607). Although this analysis is not limited to fall first time full-time freshmen, this measure is similar to what higher education institutions report to the U.S. Department of Education as first year retention.

Because of the limited number of observations available for analysis, and because Verbal SATs are taken as an indication of English language proficiency, we chose to combine two of the variables and to compare the Other Citizens who spoke English exclusively as children to respondents who were Immigrants or NNSE. We also eliminated the use of the Locale variable because there were no significant differences by Locale. Details regarding Mean Verbal SAT scores by Immigration and Language status for all of the success variables are presented in Table 2 at the end of this section.

In the group as a whole, students who returned to the first institution for the second year had mean Verbal SAT scores that were about 27 points higher than the mean for those who did not return. We found that this difference was statistically significant when we ran an Adjusted Wald test (F 1, 216) = 18.50, p>F = 0.0000. This was not unexpected, and when we looked at returners versus non-returners among the Other Citizen and EPS group we found a 33 point difference that was statistically significant (F 1, 214) = 24.54, p>F = 0.0000. However, when we looked at returners versus non-returners among the Immigrant or NNSE group, we found no difference at all in mean Verbal SAT scores. We also found that the non-returners among the Other Citizen and EPS group had significantly higher mean Verbal SAT scores than did the returners among the Immigrant or NNSE group (F 1, 214) = 7.32, P>F= 0.0074.

We then looked at a success measure based on whether the respondent was still at the first institution during the third year and found a similar pattern. The 34 point difference between all returners and all non-returners was significant (F 1, 216) = 45.76, p>F = 0.0000. When we looked at returners versus non-returners among the Other Citizen and EPS group, we found a 37 point difference that also was significant (F 1, 214) = 47.57, p>F = 0.0000. As with retention, when we compared the Immigrant or NNSE students who were active at the first institution to the unsuccessful Other Citizen and EPS group, we found that the non-returners among the Other Citizen and EPS group had significantly higher mean Verbal SAT scores than did the returners among the Immigrant or NNSE group (F 1, 214) = 5.44, P>F= 0.0206.

The next persistence measure was whether the student was active anywhere in PSE in the third year (1998). The 27 point difference in mean Verbal SAT scores between all active and inactive students was statistically significant, F(1, 216) = 9.53, P>F = .0023, as was the difference in activity within the Other Citizen and EPS group, F(1, 214) =12.96 P>F = .0004. While we found no statistically significant difference between those who were active in PSE versus those who were not active within the Immigrant or NNSE group, we found that the unsuccessful Other Citizen and EPS students had a significantly higher mean Verbal SAT score than the successful Immigrant or NNSE students F(1, 214) = 4.65, P>F = .0322. This means that for all of these persistence measures, unsuccessful Other Citizen and EPS students had significantly higher mean Verbal SAT scores than did the successful Immigrant or NNSE students.

The next success measure was whether the respondent had attained a bachelor's degree from any institution by the time of the 2001 data collection. This approximates, but is not equivalent to, a six year graduation measure. Once again, for the group as a whole, the difference between the successful students and the unsuccessful was statistically significant, $F(1, 214) = 66.88$, $P>F = .0000$, as was the difference in Verbal SAT scores by degree attainment activity within the Other Citizen and EPS group, $F(1, 212) = 54.91$ $P>F = .0000$. For this measure, we found that there was a statistically significant difference in mean Verbal SAT scores within the Immigrant or NNSE group for the first time. The Immigrant or NNSE students who had attained bachelor's degrees had a mean Verbal SAT of about 423 compared to a mean of only 351 for the students who had not attained. This difference was significant, $F(1, 212) = 23.55$, $P>F = 0.0000$. This was also the first success measure for which the mean of unsuccessful Other Citizen and EPS students was not significantly higher than that of the successful Immigrant or NNSE students.

The final success measure we used was whether the student either had a bachelor's degree or was active in PSE in 2001. This measure is similar to one used by Astin and Oseguera (2005) that counts students who are still enrolled past the sixth year as what they call 6+ completers. There was a significant difference between the means of the successful group and those who were not successful, $F(1, 214) = 47.50$, $P>F = 0.0000$. The same held true within the Citizen and EPS group, $F(1, 212) = 54.60$, $P>F = 0.0000$, and within the Immigrant or NNSE group, $F(1, 212) = 9.04$, $P>F = 0.0030$. The mean Verbal scores of unsuccessful Other Citizen and EPS students was statistically indistinguishable from that of the successful Immigrant or NNSE students.

For the group as a whole and within the Other Citizen and EPS group, mean Verbal SAT scores are significantly higher for unsuccessful than successful students. However, if one looks only at the mean for the group as a whole, one would miss that for the sub-group of Immigrant or NNSE students, mean Verbal SAT scores seem to be a poor predictor of success. We found that the unsuccessful Other Citizen and EPS students have significantly higher means than the successful Immigrant or NNSE students on three measures and similar means for the other two measures. Knowing only the mean Verbal SAT scores of the unsuccessful Other Citizen and EPS group and the successful Immigrant or NNSE group, one would incorrectly guess which group had been successful.

Table 2: Mean Verbal SAT Scores by Success Measure and Immigration/Language Status

	Mean	Std. Error	95% Conf. Interval	
One Year Retention				
All – Did Not Return	420.8	6.181	408.575	432.939
All – Returned	447.4	3.922	439.640	455.099
Other Citizen and EPS – Did Not Return	420.7	6.548	407.768	433.581
Other Citizen and EPS – Returned	453.8	4.129	445.627	461.905
Immigrant or NNSE – Did Not Return	391.2	18.957	353.825	428.557
Immigrant or NNSE – Returned	391.7	8.658	374.663	408.795
Active at the First Institution in the Third Year				
All – Inactive at First	419.4	4.668	410.189	428.590
All – Active at First	453.8	4.118	445.679	461.914
Other Citizen and EPS – Inactive	423.0	4.754	413.594	432.336
Other Citizen and EPS – Active at First	460.0	4.430	451.232	468.694
Immigrant or NNSE – Inactive	374.0	14.282	345.823	402.126
Immigrant or NNSE – Active at First	399.1	9.155	381.071	417.164
Active in PSE in the Third Year				
All – Not in PSE	417.5	9.226	399.330	435.6996
All – Active in PSE	444.9	3.710	437.546	452.1707
Other Citizen and EPS – Not in PSE	419.5	9.065	401.619	437.353
Other Citizen and EPS – Active in PSE	450.3	3.891	442.592	457.933
Immigrant or NNSE – Not in PSE	360.8	32.856	296.042	425.569
Immigrant or NNSE – Active in PSE	393.5	8.400	376.895	410.009
Had Degree in 2001				
All – No Degree	418.0	4.418	409.293	426.711
All – Has Degree	459.3	4.190	451.014	467.530
Other Citizen and EPS – No Degree	424.3	4.402	415.622	432.975
Other Citizen and EPS – Has Degree	463.3	4.576	454.242	472.284
Immigrant or NNSE – No Degree	350.5	9.883	331.037	370.002
Immigrant or NNSE – Has Degree	422.6	11.629	399.675	445.523
Had Degree or Was Active in 2001				
All – No Degree & Not Active	410.8	5.841	399.311	422.337
All – Had Degree or Was Active	451.0	3.812	443.486	458.512
Other Citizen and EPS – No Degree & Not Active	416.4	5.718	405.087	427.628
Other Citizen and EPS – Had Degree or Was Active	456.2	3.967	448.426	464.066
Immigrant or NNSE – No Degree & Not Active	346.7	15.658	315.845	377.573
Immigrant or NNSE – Had Degree or Was Active	401.2	9.455	382.541	419.818

Living Arrangements

In this section, the comparison groups will be based on immigration status alone. We focus on the immigration variable because living arrangements form a nearly perfect contrast between what should produce success under Tinto's theory of student integration and what should lead to success for Immigrant students according to Portes and current assimilation theory. Language is not an issue here. Native English-speaking immigrants from the English-speaking Caribbean nations for example, might not have language issues, but still would be faced with assimilation issues. Other students whose families speak a language other than English at home but who are far removed from the immigration experience would not have the same assimilation issues that a recent immigrant might have.

There are marked differences in the living arrangements of students by Immigration status and Locale. Overall, about 60% of the BPS:96/01 students lived in a dorm or off campus in school owned housing, 25% lived with parents or relatives, and the other 15% were in independent apartments or had some unspecified living arrangement. The Immigrants were more than 50% more likely to live with parents than are the Other Citizens. The Urban group was twice as likely to live with family as the Other Locale group. When the two attributes are combined, the Urban Immigrants were about two and one half times more likely to live with family than were the Other Locale Other Citizens, a significant difference, $F(1, 216)= 17.74$, $P>F = 0.0010$. This is bound to create a vastly different college experience. Within the Urban group, there is no significant difference between the Immigrant and Other Citizen groups. Details are presented in Table 3.

Table 3: Proportion of Students Living with Family, by Immigration and Locale

	Mean	Std. Err.	95% Conf.	Interval
All	24.7%	0.0196	0.2080	0.2853
Other Locale	21.5%	0.0219	0.1715	0.2579
Urban	42.4%	0.0398	0.3460	0.5029
Other Citizen	22.6%	0.0166	0.1937	0.2591
Immigrant	36.5%	0.0426	0.2816	0.4493
Other Locale, Other Citizen	19.6%	0.0175	0.1617	0.2306
Other Locale, Immigrant	29.5%	0.0466	0.2030	0.3869
Urban, Other Citizen	40.4%	0.0387	0.3277	0.4802
Urban, Immigrant	52.5%	0.0752	0.3772	0.6737

We used the same success measures for looking at living arrangements as we did for Verbal SAT scores. Those who lived with family were significantly less likely to return to the same institution for the second year, $F(1, 216) = 4.00$, $P>F= 0.0467$, but the difference is fairly small (4.5%). However, looking at the group as a whole is again deceptive because of differences by Immigration status. The Other Citizens who lived with family were significantly less likely to return than were the Other Citizens with

other living arrangements, F(1, 216) = 10.06, P>F= 0.0017. The Other Citizens who lived with family were also significantly less likely to return than were the Immigrants who lived with family, F(1, 216) = 6.43, P>F= 0.0119. Differences within the Immigrants by living arrangement were not significant. Details for all of the success measures by immigration status and living arrangements are presented in Table 4 at the end of this section.

Those who lived with family were also significantly less likely to be active at the first institution in the third year, F(1, 216) = 12.98, P>F= 0.0004, as were the Other Citizens who lived with family compared to the Other Citizens with other living arrangements, F(1, 216) = 18.74, P>F= 0.0000. The Other Citizens who lived with family were also significantly less likely to be active at the first institution than were the Immigrants who lived with family, F(1, 216) = 3.89, P>F= 0.0498. There was no significant difference within the Immigrant group by living arrangement.

For the group as a whole, those who lived with family were significantly less likely to be active anywhere in PSE in the third year, F(1, 216) = 5.21, P>F= 0.0234, and the Other Citizens who lived with family did not do as well as the Other Citizens with other living arrangements, F(1, 216) = 9.77, P>F= 0.0020. The Other Citizens who lived with family were also significantly less likely to be active in PSE than were the Immigrants who lived with family, F(1, 216) = 12.42, P>F= 0.0005. The third year activity rates were virtually identical for both Immigrant groups.

We see much larger differences in success when we look at bachelor's degree attainment by 2001. Those who lived with family were significantly less likely to have attained a bachelor's degree, F(1, 215) = 63.59, P>F= 0.0000. Once again, the Other Citizens who lived with family did not do as well as the Other Citizens with other living arrangements, F(1, 215) = 59.59, P>F= 0.0000. Within the Immigrant group, those who had lived with family were significantly less likely to have attained a bachelor's degree than those with other living arrangements, F(1, 216) = 4.87, P>F= 0.0283.

The earlier pattern returns when we look at whether the students had either attained bachelor's degrees or been enrolled in PSE in 2001. For the entire group, those who lived with family were significantly less likely to have been active or attained a degree, F(1, 215) = 21.59, P>F= 0.0000. Once again, the Other Citizens who lived with family did not do as well as the Other Citizens with other living arrangements, F(1, 215) = 28.59, P>F= 0.0000. Although the Other Citizens who lived with family appeared to be less successful on this measure than were the Immigrants who lived with family, the difference was not significant at even the .05 level F(1, 215) = 3.38, P>F = 0.0673. The differences within the Immigrant group by living arrangement were not significant.

Table 4: Success Measures by Immigration Status and Living Arrangement

	Mean	Std. Err.	95% Conf.	Interval
Returned to First for Second Year				
Other Living Arrangement	80.7%	0.0108	0.7854	0.8281
Lived w/Family	76.2%	0.0196	0.7232	0.8003
Other Living Arrangement, Other Citizen	80.4%	0.0118	0.7812	0.8276
Other Living Arrangement, Immigrant	81.9%	0.0399	0.7404	0.8979
Lived w/Family, Other Citizen	73.2%	0.0201	0.6919	0.7713
Lived w/Family, Immigrant	86.1%	0.0457	0.7709	0.9510
Active at the First Institution in the Third Year				
Other Living Arrangement	66.9%	0.0134	0.6423	0.6951
Lived w/Family	58.3%	0.0204	0.5432	0.6236
Other Living Arrangement, Other Citizen	66.2%	0.0143	0.6339	0.6901
Other Living Arrangement, Immigrant	74.8%	0.0417	0.6660	0.8306
Lived w/Family, Other Citizen	55.4%	0.0220	0.5106	0.5971
Lived w/Family, Immigrant	67.7%	0.0567	0.5652	0.7887
Active Anywhere in PSE in Third Year				
Other Living Arrangement	89.5%	0.0089	0.8772	0.9122
Lived w/Family	85.4%	0.0168	0.8205	0.8869
Other Living Arrangement, Other Citizen	89.2%	0.0092	0.8739	0.9100
Other Living Arrangement, Immigrant	95.6%	0.0176	0.9213	0.9908
Lived w/Family, Other Citizen	83.4%	0.0171	0.8002	0.8676
Lived w/Family, Immigrant	94.8%	0.0282	0.8921	1.0032
Had Bachelor's Degree by 2001				
Other Living Arrangement	58.6%	0.0155	0.5551	0.6161
Lived w/Family	38.4%	0.0204	0.3439	0.4242
Other Living Arrangement, Other Citizen	58.8%	0.0160	0.5568	0.6200
Other Living Arrangement, Immigrant	60.5%	0.0439	0.5185	0.6917
Lived w/Family, Other Citizen	38.5%	0.0228	0.3398	0.4296
Lived w/Family, Immigrant	42.6%	0.0707	0.2863	0.5651
Had Bachelor's Degree or Enrolled in PSE in 2001				
Other Living Arrangement	76.5%	0.0128	0.7393	0.7898
Lived w/Family	65.2%	0.0212	0.6104	0.6941
Other Living Arrangement, Other Citizen	76.6%	0.0131	0.7397	0.7916
Other Living Arrangement, Immigrant	79.9%	0.0342	0.7321	0.8667
Lived w/Family, Other Citizen	62.7%	0.0244	0.5789	0.6750
Lived w/Family, Immigrant	74.4%	0.0568	0.6322	0.8564

When we looked at the group as a whole, we found that those who became less integrated into their institutions (using living with family as a proxy) were less successful in most of the measures. The same holds true for the Other Citizen group. However, within the Immigrant group, living with family is negatively related to only one success measure, that of degree attainment within six years or so. Generally, Immigrants who lived with family were consistently more successful than Other

Citizens who did so. We found that Immigrants who lived with family had the lowest mean Verbal SAT scores of any of the Immigration/living arrangement groups, and there are indications that they are more recent arrivals to the United States. This suggests that assimilation theory may better explain success for Immigrants than retention theory, especially among more recent Immigrants.

Remedial Course-Taking

Immigrants were not significantly more or less likely than Other Citizens to take a remedial course during the first year, and combining Locale with Immigration status did not produce categories with significantly different means. Remedial reading is the only subject area where there is any significant difference between the groups. About 17% of the Urban Immigrants took a remedial reading class compared to 6.3% of the Other Locale Other Citizens ($F(1, 216) = 3.92$ $P>F = .049$) and 6.8% of the Urban Other Citizens ($F(1, 216) = 3.93$ $P>F = .049$). Also, when the three language related remedial courses are grouped together (English, Writing, and Reading), we find that 16% of Immigrants attempted at least one language related course, but only 9.7% of the Other Citizens did. This difference was significant $F(1, 216) = 4.77$, $P>F = .030$. These few differences in remedial course-taking patterns do not seem to be important. However, the different ways success is related to remedial course-taking by the groups is important. Details of the proportion of students attempting at least one remedial course are presented in Table 5.

Table 5: Proportion of Students Taking Any Remedial Course by Immigration and Locale

	Mean	Std. Err.	95% Conf.	Interval
All	17.8%	0.011	0.156	0.201
Other Locale	17.8%	0.013	0.153	0.203
Urban	18.2%	0.025	0.133	0.231
Other Citizen	17.6%	0.012	0.153	0.199
Immigrant	21.4%	0.032	0.151	0.277
Other Locale, Other Citizen	17.8%	0.013	0.152	0.203
Other Locale, Immigrant	18.0%	0.036	0.109	0.250
Urban, Other Citizen	16.4%	0.027	0.111	0.217
Urban, Immigrant	29.3%	0.063	0.170	0.417

We used the same success measures for looking at remedial course-taking as we had for the other variables. There was not a significant difference in the proportion of students who returned to the first institution for the second year by whether the students had attempted a remedial course in the first year or not. Once again, looking at the group as a whole is deceptive. Part of the reason that the overall group does not demonstrate a significant difference in rates is that the Other Citizen and Immigrant groups move in opposite directions in relation to attempting at least one remedial course. The Other Citizens who took at least one remedial course were significantly less likely to return than were the Other Citizens who had not taken a remedial course,

(F 1, 216) = 5.36, P>F= 0.0216. Remarkably, the Immigrants who had taken at least one remedial course were significantly more likely to return to the first institution for the second year than were Immigrants who had not attempted a remedial course, (F 1, 216) = 10.90, P>F= 0.0011. The Other Citizens who took at least one remedial course were significantly less likely to return than were the Immigrants who had taken a remedial course, (F 1, 216) = 53.30, P>F= 0.0000. Details for all of the success measures as related to remedial course-taking are presented in Table 6 at the end of this section.

For staying at the first institution through the third year, the pattern is slightly different. For the group as a whole, those who attempted a remedial course lagged significantly behind those who had not, (F 1, 216) = 16.18, P>F= 0.0001. The Other Citizens who took at least one remedial course were significantly less likely to return than were the Other Citizens who had not taken a remedial course, (F 1, 216) = 18.68, P>F= 0.0000. The Other Citizens who took at least one remedial course were also significantly less likely to remain than were the Immigrants who had taken a remedial course, (F 1, 216) = 5.79, P>F= 0.0172. There was no significant difference in the proportion of students still active at the first institution in the third year within the Immigrant group by remedial course-taking status.

Within the group as a whole, those who had attempted a remedial course were significantly less likely to be active anywhere in PSE in the third year, (F 1, 216) = 54.01, P>F= 0.0466. The Other Citizens who had taken a remedial course did not do as well as the Other Citizens who had not taken a remedial course, (F 1, 216) = 4.72, P>F= 0.0309, and the Other Citizens who had taken a remedial course were also significantly less likely to be active in PSE than were the Immigrants who had taken a remedial course, (F 1, 216) = 24.72, P>F= 0.0000. The third year activity rates were virtually identical for both Immigrant groups.

We see much larger differences in success when we look at bachelor's degree attainment by 2001, and they are more like what we would have expected for all of the success measures. Those who had attempted a remedial course were significantly less likely significantly to have attained a bachelor's degree, (F 1, 215) = 56.78, P>F= 0.0000. Once again, the Other Citizens who had taken a remedial course did not do as well as the Other Citizens who had not done so, (F 1, 215) = 46.77, P>F= 0.0000. For the earlier success measures, Immigrants who had taken a remedial course were as successful, or more successful, than those who had not done so. This success measure differed in that Immigrants who had not taken a remedial course were more than twice as likely to have attained a bachelor's degree by 2001 than those who had taken a remedial course, (F 1, 215) = 20.19, P>F= 0.0000.

The Immigrants fared much better when we looked at whether the students had either attained bachelor's degrees or been enrolled in PSE in 2001. For the group as a whole, those who had taken a remedial course were significantly less likely to have been active or attained a degree, (F 1, 215) = 22.51, P>F= 0.0000. Once again, the Other Citizens who had taken a remedial course did not do as well as the Other Citizens who

had not, (F 1, 215) = 25.85, P>F= 0.0000. The differences within the Immigrant group by remedial course-taking were not significant.

Table 6: Success Measures by Remedial Course-Taking and Immigration Status

	Mean	Std. Err.	95% Conf.	Interval
Returned to First for Second Year				
No Remedial	80.0%	0.010	0.780	0.820
Any Remedial	75.5%	0.023	0.710	0.801
Other Citizen, No Remedial	79.8%	0.011	0.776	0.820
Other Citizen, Any Remedial	73.8%	0.024	0.690	0.786
Immigrant, No Remedial	83.2%	0.035	0.762	0.902
Immigrant, Any Remedial	96.3%	0.019	0.925	1.001
Active at the First Institution in the Third Year				
No Remedial	66.4%	0.013	0.639	0.689
Any Remedial	54.4%	0.028	0.488	0.599
Other Citizen, No Remedial	65.9%	0.013	0.632	0.685
Other Citizen, Any Remedial	52.8%	0.029	0.471	0.584
Immigrant, No Remedial	73.5%	0.036	0.663	0.806
Immigrant, Any Remedial	73.8%	0.085	0.570	0.906
Active Anywhere in PSE in Third Year				
No Remedial	89.0%	0.008	0.874	0.907
Any Remedial	85.0%	0.020	0.811	0.888
Other Citizen, No Remedial	88.6%	0.009	0.869	0.903
Other Citizen, Any Remedial	83.9%	0.021	0.798	0.881
Immigrant, No Remedial	94.8%	0.020	0.909	0.987
Immigrant, Any Remedial	97.3%	0.018	0.938	1.007
Had Bachelor's Degree by 2001				
No Remedial	58.2%	0.015	0.553	0.610
Any Remedial	35.6%	0.028	0.301	0.411
Other Citizen, No Remedial	57.8%	0.015	0.549	0.608
Other Citizen, Any Remedial	36.5%	0.029	0.308	0.422
Immigrant, No Remedial	63.1%	0.041	0.551	0.711
Immigrant, Any Remedial	26.5%	0.075	0.117	0.414
Had Bachelor's Degree or Enrolled in PSE in 2001				
No Remedial	76.3%	0.012	0.740	0.787
Any Remedial	62.4%	0.029	0.567	0.681
Other Citizen, No Remedial	76.1%	0.012	0.737	0.786
Other Citizen, Any Remedial	60.6%	0.031	0.545	0.666
Immigrant, No Remedial	79.0%	0.036	0.720	0.860
Immigrant, Any Remedial	82.3%	0.059	0.706	0.939

Conclusions

These are just a few examples of differences in the behaviors and outcomes of Immigrants and NNSE students as compared to Other Citizens and EPS students in public four-year institutions. The relationships between success and Verbal SAT scores and remedial course-taking are very different for Immigrants compared to Other Citizens. These differences suggest that SAT scores and the potential need for remedial work should be considered differently for Immigrants and NNSE speakers during the application evaluation process, at least to the point of establishing a different scale for these variables for Immigrants and NNSE students.

Current retention theory conflicts with current assimilation/acculturation theory at the most basic level. Retention theory says that students who separate from family and attach themselves to the institution should do better, but current assimilation theory says that immigrants who maintain close contact with family and community should be more successful. This paper shows that at least for some immigrant students, assimilation theory may be a better fit. If the public urban higher education institutions are going to serve large immigrant populations, perhaps it is time for them to synthesize the two. Instead of separating the students from their existing communities and bringing them into the academic community as individuals, institutions might consider taking a more active role in the assimilation and acculturation process. They could accomplish this by establishing programs to engage the students' families with the academic community and by recognizing and respecting students' ethnic identities. An example of this might be establishing English as a Second Language (ESL) classes on campus specifically for the families of students. This would familiarize the students' families with the institution so that it no longer felt like a foreign entity to them. Another example might be establishing an outreach program where advanced students were hired to periodically contact newer students with whom they shared a common language and/or ethnic identity to ask about the student's progress and comfort at the institution. This would allow Immigrants and NNSE students to feel as if they had not abandoned their community to join academia, because part of that ethnic community would apparently comfortably exist within the academic community. For Immigrants, that would be a true student integration model.

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