

MEETING TODAY'S HIGHER EDUCATION GOALS VIA THE NATIONAL CENTER FOR EDUCATION STATISTICS' POSTSECONDARY SAMPLE SURVEYS

A Paper Commissioned by the National Postsecondary Education Cooperative

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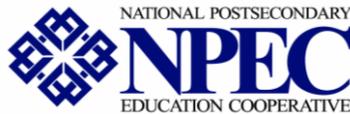
A Paper Commissioned by the National Postsecondary Education Cooperative

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INTRODUCTION

As the primary federal entity for collecting and analyzing data related to education in the United States, the National Center for Education Statistics (NCES) has existed in one form or another since 1867. Initially charged with collecting basic information, such as enrollment, attendance, degrees conferred, and the number of colleges and universities, in the mid-1960s the information collected by NCES began to be put to a new use — supporting the education proposals that were making their way through the legislative process on Capitol Hill (Grant, 1993). To better inform the legislative process, NCES conducted a survey in 1968 to determine the specific data needs of educational policymakers and researchers and, based on the results, launched the first longitudinal study of education ever of a single high school class of Americans — the National Longitudinal Study of the High School Class of 1972 (NLS:72).

Since this watershed moment, NCES has continued its longitudinal survey work at not only the secondary, but also the postsecondary level. The postsecondary education sample survey program began with the cross-sectional National Postsecondary Student Aid Study (NPSAS), first administered in 1987. This legislatively-mandated survey has been repeated every three or four years and serves as the base-year for two postsecondary longitudinal studies designed to collect more detailed student-level data on persistence, attainment, employment, and other life experiences since leaving college: the Beginning Postsecondary Students Longitudinal Study (BPS) and the Baccalaureate and Beyond Longitudinal Study (B&B). Taken together, the results of these three postsecondary sample studies have been used in a myriad of ways and are eagerly anticipated by researchers and policymakers alike. Both groups are quick to point out that the rapidly changing context surrounding postsecondary education, coupled with the lead time required to put these surveys into the field, means that making sure postsecondary data are relevant to contemporary needs is a difficult task.

In an effort to improve the relevancy of NCES postsecondary survey data to current higher education data needs, this paper will closely examine the ways in which the postsecondary landscape has changed since the inception of the first NCES longitudinal survey, paying particular attention to the contents of the three aforementioned surveys and the extent to which they align with the current postsecondary context. The frame for this paper is the understanding that these surveys are temporal in nature. That is, the surveys address particular needs of legislators and researchers as they are understood through a broader sociocultural and historical context at a specific point in time. Furthermore, while this context is static during survey creation and data collection, it is very much dynamic in the subsequent analysis, reporting, and interpretation of results by researchers and legislators. The data from the surveys will continue to be used by these audiences for years and decades, during which time the context will inevitably change, as will the interpretation of the surveys and their relevance

to the current higher education issues. In this way, the more the surveys address the current needs of higher education and also anticipate future needs, the more effective they will be.

With each iteration of the surveys, there is a unique opportunity to adjust them to the particular sociocultural and historical moment in the postsecondary landscape. We begin by briefly reviewing the sociocultural and historical context surrounding the NCES postsecondary sample surveys and the societal pressures that helped fuel the demand for them, and then set the stage for the data needs in this particular moment in U.S. higher education. This paper concludes with a discussion of additional broad topics that might be considered for inclusion in these surveys to realign their content with the current postsecondary landscape.

THE HIGHER EDUCATION LANDSCAPE BEFORE NCES LONGITUDINAL STUDIES

The end of World War II and the resulting higher education policy actions of the federal government — specifically the 1944 G.I. Bill of Rights and President Truman’s Commission on Higher Education in 1947 — represent the federal government’s official entrance into the world of student-centered, higher education finance. In addition to subsidizing tuition, books, and fees, and providing living expenses for 7.8 million veterans, as enrollment sharply increased the infusion of federal dollars provided a huge boost to the economic boost to colleges and universities in the late 1940s and 1950s. This expansion accelerated with the federal provision of loans to students enrolled in “strategic fields” through the cold war-inspired National Defense Act of 1958, spurred by the Soviet Union’s launching of Sputnik in the previous year (Galloway and Price 2011). By the end of the decade, a consensus had formed among federal policymakers that increasing postsecondary educational attainment was a public good that benefited all of society.

As is well documented, the 1960s witnessed increased demands for inclusion and opportunity for women and racial and ethnic minorities through the Civil Rights movement, which ultimately opened colleges and universities to new groups of students. An important vehicle for making this happen was the 1965 Higher Education Act, in which the federal government took on the role as guarantor of opportunity for qualified students, regardless of background. Not surprisingly, this significantly increased the cost to the federal government, and more attention began to be paid to the private and social returns of education. In other words, given this new federal investment in higher education, policymakers wanted to be sure that the federal government was getting a sufficient return on their rapidly expanding financial investment.

THE NCES SECONDARY LONGITUDINAL STUDIES OF THE 1970s AND 1980s

To address the needs of policymakers and researchers, NCES launched its first nationally representative longitudinal study in 1972, the NLS:72. The goal of NLS:72 was to understand the educational, work, family, and community activities of the high school class of 1972. High

response rates and low student attrition laid the groundwork for the NCES longitudinal studies that would follow. In fact, the data-gathering success of NLS:72 would prove critical as the next several years saw an ever-increasing commitment of federal educational dollars in the form of Pell Grants and State Student Incentive Grants; a significant expansion of student lending through the creation of Sallie Mae, loan guarantee agencies, and the introduction of loans for parents; and the eligibility of students at proprietary institutions to participate in the federal financial aid program (Galloway & Price, 2011). Taken together, both the costs and benefits of this increase in federal spending would need to be documented empirically. Although the first federal longitudinal survey focused on student finance of postsecondary education was still nine years away, the second in a series of secondary longitudinal studies began in 1980.

This popular longitudinal survey, known as High School and Beyond (HS&B), followed a nationally representative sample of students who were sophomores and seniors in 1980. It investigated critical transitions of youth from school to adult life, including cognitive growth, dropout behavior between the sophomore and senior years, as well as parental aspirations and teacher assessments for each surveyed student. This information helped frame educational policy for the next few decades and revealed two important findings: that math course-taking affected math test score gains net of family background and that high school students who did not graduate on time, or who graduated on time but took time off before college, had lower rates of bachelor's degree attainment than others (Carroll, 1989).

The final secondary longitudinal survey of the 1980s, the National Education Longitudinal Study of 1988, surveyed a nationally representative sample of students who were in the eighth grade in 1988 about school, work, and home experiences; educational resources and support; the role in education of their parents and peers; neighborhood characteristics; educational and occupational aspirations; and other student perceptions. With its four follow-ups (1990, 1992, 1994, and 2000), the data from this survey have been useful for policy-relevant research about educational processes and outcomes. Specifically, student learning, early and late predictors of dropping out, and school effects on students' access to programs and equal opportunities to learn. Perhaps most importantly, the 1992 follow-up provided researchers an opportunity to compare aspects of three graduating classes (1972, 1980, and 1992), since the 1972 and 1980 cohorts had been the subject of the first two NCES longitudinal surveys (NLS:72 and HS&B).

THE NCES POSTSECONDARY LONGITUDINAL STUDIES

Although the first two NCES secondary longitudinal surveys provided some data on the efficacy of the increased federal investment in education, the legislatively mandated NPSAS was conducted in 1987 to inform policymakers directly about the federal investment in financing students' postsecondary education. This nationally representative portrait of students enrolled in postsecondary education was designed to understand who these students were, where they

were enrolling, how they were paying for college, what they were experiencing, and what educational and labor market outcomes they were attaining. As part of the authorizing legislation, this cross-sectional study was initially designed to be repeated triennially (and later quadrennially). Critically for the NCES postsecondary survey program, NPSAS has been used as the base for two NCES postsecondary longitudinal surveys that continue to this day: BPS and B&B.

The first of these, the BPS, surveys first-time beginning college students at three points in time: at the end of their first year, and then 3 and 6 years after first starting in postsecondary education¹. These surveys focus on persistence, attainment, and labor market outcomes for those who complete degrees and for those who leave before completing. Each BPS is spun off of every alternate NPSAS; this translates into BPS data collections associated with the 1990, 1996, 2004, and 2012 NPSAS data collection efforts.

The second of these surveys, the B&B, examines bachelor's degree recipients' workforce participation, income and debt repayment, expectations regarding graduate study and work, entry into and persistence through graduate school, and participation in community service. It also addresses several issues specifically related to teaching, including teacher preparation, entry into and persistence in the profession, and career paths. The B&B has been spun off from NPSAS in 1993, 2001, and 2008 (although the 2001 wave had only a single one-year follow-up). It is scheduled to be linked with the 2016 NPSAS, with full-scale data collection planned for 2017.

Together, these surveys have provided researchers and policy makers with an abundance of statistical data. However, the time lag between study design and the release of actual data often results in information that may not be current, especially given how rapidly the postsecondary landscape can change. Despite the fact that the time lag between data collection and data reporting represents a significant structural problem for NCES and its contractors that may ultimately be unavoidable, alignment of the goals of the surveys with the topics and questions that appear on them may be resolvable. To address the temporal alignment issue, in the next section we identify six major trends that have shaped postsecondary education since the inception of the postsecondary sample surveys and discuss the implications that these trends have for the survey questions used in data collection. Our paper then concludes with currently emerging trends and the implications they may have on future NCES data collection efforts.

¹ The first BPS survey spanned only 5 years.

CHANGES IN THE POSTSECONDARY EDUCATION LANDSCAPE AND THEIR IMPLICATIONS FOR NCES POSTSECONDARY SAMPLE SURVEYS

Many have said that postsecondary education as an industry is slow to change (Bess & Dee, 2012). Yet, the sociocultural and historical context for postsecondary education has changed dramatically since the inception of the first NCES postsecondary surveys. In particular, the past three decades have brought considerable change to U.S. colleges and universities and the students they serve (Bastedo, Altbach, & Gumpert, 2016). These changes in higher education can largely be understood from the perspective of Systems Theory (Bess & Dee, 2012). Postsecondary education can be thought of as an open system, where the elements of the system (e.g., institutions, associations) are affected by their environments (e.g., political, economic, social, and technological) and the other elements. In the case of higher education over the past 30 years, broader economic and political forces, in addition to educational movements and technological innovations, have shaped the system in ways that have wide-reaching implications for students, institutions, and policy.

One prominent example of the way that broader forces have accelerated change in higher education is the economic recession of 2008. The recession caused financial difficulties for institutions of higher education, as state systems further cut already declining spending on higher education (Chronicle, 2009). Institutions were forced to respond by increasing tuition, cutting programs, and instituting furloughs for faculty and staff. To relieve budget shortfalls, institutions placed higher importance on the use of online modes of delivery for courses and institutions (Chronicle, 2010). Governmental regulation and oversight increased as policymakers wanted to ensure that federal and state funds were being used wisely. Simultaneously, the No Child Left Behind Act of 2001 (NCLB) shepherded the focus on standards and testing in K-12 education. This educational and political movement was officially incorporated into the higher education agenda in 2005 when the Spellings Commission focused on accountability and assessment of what students learn in college (Campbell, 2015). In another broader context, the early 21st century yielded changes in technology in which ‘big data’ became the norm and Massive Open Online Courses (MOOCs) were heralded as a potential fix to the perennial “iron triangle” of costs, quality, and access (Perna & Ruiz, 2016).

While this brief does not enumerate all the changes in higher education during this period, the focus is on six changes that may have particular relevance to the NCES postsecondary sample surveys: the rising costs of college and the associated changes in financing American postsecondary education; the evolving use of technology; the increasing diversity of the student body; globalization; the changing professoriate; and the increasing emphasis on accountability and assessment.

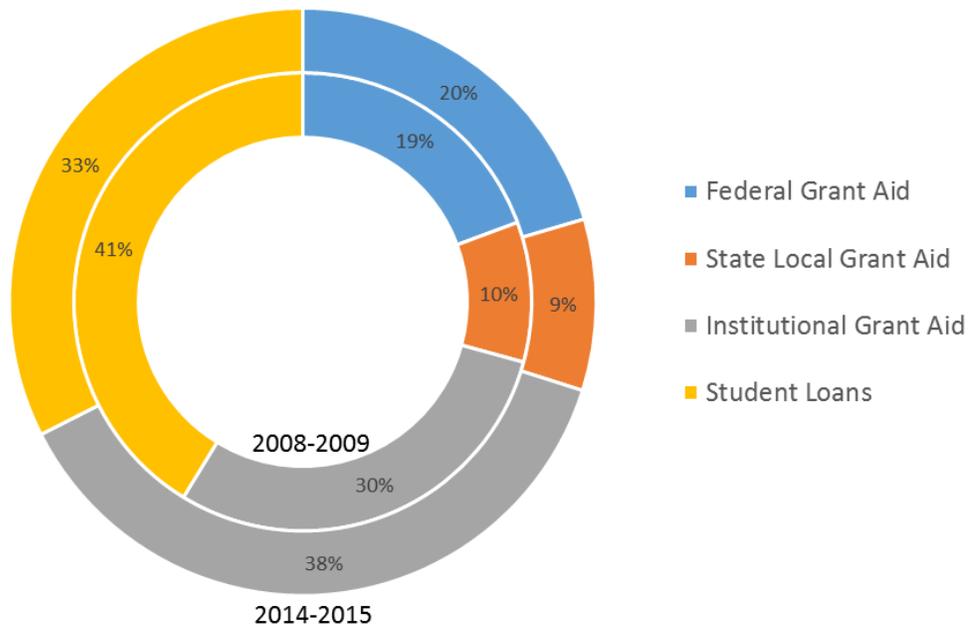
FINANCING POSTSECONDARY EDUCATION

One significant change in U.S. postsecondary education since the beginning of the NCES postsecondary sample surveys is the financing of colleges and universities. Although there have been many changes in the financing of postsecondary education, the focus is on two changes that are inextricably linked: rising tuition and declining state appropriations. It is recognized that these trends do not fully encompass the broad array of financial trends that exist in different postsecondary education sectors, institutional types, state systems, or individual institutions. Yet, in the past two decades, the overarching trend has been so pervasive that it has important implications for NCES sample surveys.

The broad public rhetoric that is discussed by media as well as policymakers (Field, 2013) is that the costs of college, in the form of tuition, have increased gratuitously over time and are now overly burdensome to students (and therefore the nation) as they face increasing debt and the tendency to default on student loans. This trend has occurred in both the public and private sectors, albeit to varying degrees. According to Johnstone (2016), tuition for private, nonprofit, 4-year institutions was \$31,231 in 2014–15, an increase of 24 percent in inflation-adjusted dollars from the 2004–05 academic year. During the same period, tuition for public, nonprofit, 4-year institutions rose from \$6,448 to \$9,139, a 41.7 percent increase (inflation adjusted).

Not surprisingly, given the increases in average tuition, a greater proportion of students received money for college and received greater amounts, from the 1990s to the 2010s. In an NCES report, Woo (2013) noted that in 1992, 49 percent of college graduates borrowed, on average, \$15,000 for college. In 2007, those statistics increased, with 66 percent of graduates having borrowed on average (inflation adjusted) \$24,700 for college. Additionally, there have been changes in the forms of aid that students receive. Student loans were the largest contributor to the typical student aid package in 2008-2009. By contrast, institutional grant aid was the largest contributor to student aid in 2014–15, while the proportion of student loans decreased during this period (Figure 1).

Figure 1. Student Financial Aid Package Comparison



Source: IPEDS

The reasons for the significant increase in college tuition are vast and complex. Some scholars blame incentive structures, such as the rankings that reward institutions for having greater resources and offer few incentives for efficiency. The increasing administrative costs of institutions provide evidence of this resource race (Morphew & Baker, 2004). Other scholars cite the sustained increase in enrollments over time (McGuinness, 2016) and the projections that enrollments may fluctuate somewhat but will continue to grow at least through the early 2020s (Johnstone, 2016).

At the same time, it is quite clear that the change in tuition is largely associated with broader economic trends that influence other forms of financial support for postsecondary education. State funding of higher education provides a poignant illustration of this point. According to the College Board (2017), using data from NCES and the State Higher Education Executive Officers Association (SHEEO), “in 2014-15, appropriations per FTE student were 8% lower in inflation-adjusted dollars than they were a decade earlier, and 11% lower than they were 30 years earlier.” This waning support had a direct effect on student costs because as state appropriations to higher education fell, institutional emphasis on revenue from tuition increased. States tend to reduce spending on higher education in times of economic downturn, and during the economic recession of 2008, state funding for postsecondary education plummeted in order to spend on other necessities. In 1994, for instance, states spent 14.2 percent of their expenditures on Medicaid and 13 percent on higher education (i.e. in terms of

direct subsidies to institutions rather than via student aid packages); in 2014, states increased the proportion spent on Medicaid to 19.1 percent and decreased spending on higher education to 9.4 percent (McGuinness, 2016). According to McGuinness (2016, p. 261), “from 1988 to 2013, the share of funding per full-time student from state appropriations decreased from 76 percent to 53 percent, and the student share increased from 24 percent to 47 percent.”

Although these broad trends are convincing, there are wide variances by institutional type, sector, region, and individual institutions. For example, the proportion of college revenues from tuition varies dramatically from state to state—from 13.8 percent to 84.5 percent (McGuinness, 2016). With regard to student debt, there are also differences based on the type of institution attended and student demographics. Although two-thirds of graduates borrowed, the amount borrowed was much higher for students who attended for-profit institutions as well as for low-income students (Woo, 2014). Additionally, although it is true that there have been increases in tuition, media coverage has likely contributed to a rhetoric about the costs of college that exceeds the documented increases (Baum, 2016). Finally, by contrast with the decrease in state support following on the economic recession of 2008, there has been a slight upturn in state appropriations between 2011-12 and 2014-15 (an 8% increase; College Board, 2017).

Given the concern of rising costs in the form of tuition and declining state support, there are several pressing concerns for postsecondary education that could be better understood with data from the national postsecondary sample surveys. These questions include:

- How is debt affecting student and alumni experiences with learning, broader development, and career?
- If states and institutions try alternative models to solve the “cost problem,” how will this influence student completion and learning? For example, how will students fare at institutions with greater proportions of adjunct faculty, with reduced administrative, athletics, and support services, or at institutions with high tuition and high aid models?
- How do students fare in states with very low funding to higher education, and what influence does this have on access?
- Is there a tipping point for students to decide to forgo higher education, and if so, what is it?

FINANCE IN THE NATIONAL POSTSECONDARY SAMPLE SURVEYS

Despite the many changes that have occurred over the past few decades in the way that postsecondary education has been financed in the United States, the three NCES postsecondary surveys have done a remarkable job in capturing the information required to describe these changes. In fact, the two biggest trends for student financing of higher education — rising tuitions and an increasing reliance on debt financing — have been extraordinarily well

documented by NPSAS and, to a lesser extent, BPS and B&B. Given the explicit goals of NPSAS, this should come as no surprise; after all, NPSAS was designed to inform policymakers directly about the federal investment in financing students' postsecondary education. NPSAS is a quadrennial survey; as the follow-up surveys, BPS and B&B play important longitudinal roles.

A review of both BPS and B&B shows that in addition to describing the packaging of financial aid in considerable detail, the surveys also describe the effects of rising tuitions and debt financing on the everyday lives of students. For example, BPS provides a wealth of human capital information — enough to actually model cost-benefit calculations for individual students. In contrast, B&B investigates students' overall satisfaction with the quality of their education as well as the extent to which the cost of college and resultant loan debt has affected their marriage, choices regarding work (number of jobs, type of jobs, hours worked, field worked in), and overall stress levels. Importantly, since both of these surveys are longitudinal, researchers are able to model inter-temporal change in many of these measures to better understand the long-term returns to the federal government and to the students themselves.

Overall, the three NCES postsecondary surveys do an excellent job of capturing the information needed to thoroughly understand the ways that students finance their education and the effect that it has on their lives postgraduation. In fact, the only place where any additional survey items might prove useful is in NPSAS, where questions might be added to help researchers and policymakers understand the ways that anticipated loan debt among current students is affecting their future academic and career plans. However, relative to some of the more major changes we suggest, adding questions like these are of lesser importance and should be treated as such.

EVOLVING USE OF TECHNOLOGY

Technology has been a dynamic game-changer in higher education over the past few decades. As Perna and Ruiz (2016) suggest, “the relationship between technology and higher education is complex and ever changing” (p. 432). The term *technology* can be very broadly defined, especially when it comes to how it is applied and used in the field of education. When building an understanding in this area, we must examine technology as a tool to deliver content and to facilitate student access and connections to the institution. Colleges and universities have a long history of incorporating distance learning in a variety of formats, including television, video cassettes, and printed course lab packets (Picciano, 2006). Indeed, institutions of higher education were among the first to embrace the Internet and World Wide Web to bring learning to students. Colleges and universities also used technology to better understand their student population. However, in 1990, during the beginning of the national postsecondary sample surveys, the use of modern technologies was limited in both the broader population as well as institutions of higher education when compared to the 2000s.

Increased access to technology has changed expectations among today's college students and their families. "With the ubiquity of high-speed Internet and the proliferation of mobile devices, information and communication technologies influence countless aspects of daily life and, consequently, numerous dimensions of higher education" (Pew Research Center, 2014). Among students and their families, there is an expectation "that a 'modern' college or university will have state-of-the art Wi-Fi access, campus computing and technology laboratories, and web-based course management and student information systems" (Perna & Ruiz, 2016, p. 433). Additionally, it has become possible for today's college student to complete research projects from the comfort of their residence halls via digital libraries and repositories rather than make the trek across campus to the library. How a student completes research in college has largely transitioned from physical books and journals to digital collections. Moreover, college students have also increased their use of social media (e.g., Facebook, Twitter, and Instagram) in the past decade, although there are demographic differences in such use (Strayhorn, 2012).

Technology has revolutionized the college search and selection process. Students now rely increasingly on technology to help make the decision as to which college they wish to attend. A 2014 poll of college seniors and parents found that a college's website was the most influential resource used in the college search process (Noel-Levitz, 2014). Nearly two-thirds (61%) of college-bound seniors and just over half (51%) of parents polled reported that they most preferred to learn about college using web-based resources (Noel-Levitz 2014). In other words, Additionally, students increasingly expect to be able to register for courses, submit financial aid and admissions applications, peruse course catalogues, access their class schedules, and attend classes using a digital format. Colleges and universities are responding to these expectations. In 2006, more than 90 percent of the public and private two-year institutions reported that they were offering or were planning to offer such services (Erickson et al., 2007).

Since the creation of early, online course-delivery systems in the late 1990s, the availability of a college education delivered via the Internet has increased considerably (Bates & Sangrà 2011, Brewer & Tierney 2012). It often is argued whether technology is replacing or enhancing traditional approaches to postsecondary education. Bates and Sangrà (2011) argue that technology has enhanced traditional approaches without changing the teaching and learning process. By contrast, faculty have demonstrated a deep skepticism about whether online courses can hold the same quality as on-site courses, but this skepticism seems to be decreasing over time (Perna & Ruiz 2016). Nonetheless, the incorporation of online, hybrid, and collaborative learning into what has long been considered "traditional" face-to-face classroom instruction is among the fastest-growing trends in higher education technology (Johnson et al., 2014).

According to the Integrated Postsecondary Education Data System (IPEDS), the number of institutions offering distance education opportunities increased from 2,377 institutions in 2004 to more than 3,200 in 2011 (Table 1). In the fall of 2012, IPEDS began assessing the availability of online learning at the undergraduate and graduate level separately. The data illustrate a growth of 7 percent and 14 percent, respectively between 2012 and 2016.

Table 1. Number of degree-granting postsecondary institutions offering distance education courses or programs, by level:
2004 to 2015

Distance education offerings by level	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	2,377	2,361	2,558	2,662	2,770	2,885	3,083	3,244	4,476	4,750	4,934	4,951
Undergraduate programs or courses	—	—	—	—	—	—	—	—	3,040	3,169	3,258	3,280
Graduate programs or courses	—	—	—	—	—	—	—	—	1,436	1,581	1,676	1,671

— Not available.

NOTE: Distance education defined as: An option for earning course credit at off-campus locations via cable television, internet, satellite classes, videotapes, correspondence courses, or other means. In the Fall 2012 Institutional Characteristics Survey this item was changed to allow institutions to describe at what level this special offering was available. This means an institution may answer affirmatively for both undergraduate and graduate offerings.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Institutional Characteristics Survey, Fall 2004 through Fall 2015.

Beyond examining course offerings, by analyzing student enrollment in online courses, it appears that students increasingly are choosing to replace or supplement their face-to-face lessons with those delivered in an alternate format. In fall 2012, 1.7 million undergraduates in the United States were enrolled exclusively in distance education courses; by fall 2014 this number had grown to 2.1 million (Table 2). The number enrolled in some distance learning, in addition to their traditional face-to-face courses, grew from 2.5 million to 2.7 million over that same time period. This growth cannot be explained by an increase of undergraduates enrolled in college; the number of undergraduates during this time actually decreased by more than 12,000 students.

Table 2. Number and percent of undergraduates enrolled in distance education, by delivery method: 2012 to 2014

Delivery method	2012		2013		2014	
	Number	Percent	Number	Percent	Number	Percent
Total	17,793,449	100.0	17,706,377	100.0	17,780,778	100.0
Enrolled exclusively in distance education courses	1,739,869	9.8	1,835,522	10.4	2,122,728	11.9
Enrolled in some distance education courses	2,510,243	14.1	2,614,243	14.8	2,703,717	15.2
Not enrolled in any distance education courses	13,543,337	76.1	13,256,612	74.9	12,954,333	72.9

NOTE: Distance Education defined as: An option for earning course credit at off-campus locations via cable television, internet, satellite classes, videotapes, correspondence courses, or other means. In the Fall 2012 Institutional Characteristics Survey this item was changed to allow institutions to describe at what level this special offering was available. This means an institution may answer affirmatively for both undergraduate and graduate offerings.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Enrollment Survey, Fall 2012 through Fall 2014.

Although the broad trend is that there has been an increase in online and distance education, there are differences by sector. For example, the 4-year, for-profit sector has taken the lead in distance education (they had 69 percent of their population taking distance education courses in fall 2014 — a growth of 8 percentage points since 2012), while other sectors have taken note and have increased offerings and enrollment (Table 3). The public, 4-year-and-above sector had approximately one-quarter of their undergraduates enrolled in distance education courses in fall 2014. This is up from one-fifth of undergraduates in the fall of 2012. The private, not-for-profit, 4-year sector saw an increase from 16 percent of the sector’s undergraduate population taking distance education in 2012 to 21 percent in 2014.

Table 3. Number of undergraduates and proportion of each sector enrolled in at least some distance education courses, by sector: 2012 to 2014

Sector	2012		2013		2014	
	Number	Proportion of sector	Number	Proportion of sector	Number	Proportion of sector
Total	4,250,112		4,449,765		4,826,445	
Public 4-year or above	1,445,314	21	1,546,670	23	1,693,024	25
Private not-for-profit 4-year or above	447,062	16	501,788	18	574,376	21
Private for-profit 4-year or above	514,268	61	533,216	64	680,248	69
Public 2-year	1,804,670	27	1,826,050	28	1,832,913	28
Private not-for-profit 2-year	2,782	7	2,116	5	2,774	7
Private for-profit 2-year	33,064	9	35,368	10	39,151	11
Public less-than 2-year	949	2	1,002	2	476	1
Private not-for-profit less-than 2-year	45	0	75	1	56	1
Private for-profit less-than 2-year	1,958	1	3,480	1	3,427	1

NOTE: Distance Education defined as: An option for earning course credit at off-campus locations via cable television, internet, satellite classes, videotapes, correspondence courses, or other means. In the Fall 2012 Institutional Characteristics Survey this item was changed to allow institutions to describe at what level this special offering was available. This means an institution may answer affirmatively for both undergraduate and graduate offerings.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Enrollment Survey, Fall 2012 through Fall 2014.

Given that distance education continues to be a growing phenomenon and that college students continue to increase their interaction with technology, national postsecondary sample surveys could collect information about the pervasiveness of technology in the college student experience. These data could answer questions, such as:

- What are the myriad ways that technology supports a college education today, both in and outside of the classroom?
- How do hybrid, exclusively online, and on-site courses compare on important learning outcomes?
- Do certain students fare better with the use of technology than others, and if so, who?
- Does increasing technology increase access while decreasing costs and maintaining or improving quality?

- How does technology use during college support technology use in career?

TECHNOLOGY IN THE NATIONAL POSTSECONDARY SAMPLE SURVEYS

A review of the three existing NCES longitudinal studies reveals a dearth of information asked regarding this evolving topic, which is so critical to understanding postsecondary education today. By contrast with the sections on finance where the national postsecondary surveys include the necessary data, the surveys do not offer broad insights into the pervasive use of technology by college students. An in-depth examination of these surveys reveals that the questions on this topic are limited in scope. The extent to which this area is covered is restricted to basic questions on whether the student enrolled in distance education courses and programs. NPSAS asks about participation in online classes, whether the student was enrolled in some, all, or none of these types of classes, and whether the entire program was delivered via distance learning. BPS and B&B take this one step further by asking whether the student would have enrolled at their institutions if online courses were not available.

However, distance education can take place in many different forms (synchronized versus asynchronous learning, correspondence versus online facilitation, requirements to use testing centers, etc.). There is also the addition of MOOCs, which allow the general public to enroll in college classes across the country at participating institutions at no cost to participants, including at some of the country's top universities. As students increase their enrollment in these alternative delivery programs, it becomes important to understand how their experiences differ from those who attend class or college in a more traditional way. For example, future surveys might ask distance-learning students how their experiences are similar and dissimilar to face-to-face instruction, investigate these students' academic confidence and engagement with other students and faculty on their campus, how they access student and academic support services, as well as their level of satisfaction with this alternate content delivery and the technology used. It may additionally be useful to ask these students why they chose distance education and the impact it had on their outside employment and family.

Furthermore, beyond distance-learning students, almost all of today's college students interact with some form of technology both inside and outside the classroom. Most students use technology to engage with their college experiences, including investigating college options, applying for admission, making their course schedules, interacting with faculty members, engaging with support services, socializing with other students (including diverse others), and as a part of the teaching and learning process. The understanding of this increasing trend is limited because there are no questions on the NCES surveys about these broader uses of technology in postsecondary education. Questions could be added on technology-based didactic practices and the use of social media in the classroom. For example, the educational method of adaptive learning uses technology as an interactive approach to tailor teaching to

the individual learner based on their specific needs. It would be valuable to know how this technology is being used both inside the classroom and beyond. Additionally, what is the role of social media as a teaching and learning resource? The addition of more targeted technology topics would add considerably to the understanding of students' postsecondary experiences.

CHANGE IN COLLEGE STUDENTS: INCREASED ENROLLMENT, INCREASED DIVERSITY, AND DIFFERENT PATHWAYS THROUGH HIGHER EDUCATION

The American college student today is different than during the inception of the postsecondary sample surveys: in quantity, in diversity, and in the ways in which they navigate higher education. American postsecondary education has seen dramatic growth over the past 25 years. This is true not only in the number of students attending colleges and universities, but also in the increased diversity among the student body. More students who are traditionally underserved by colleges and universities are now enrolling. In this section, we focus particularly on racial and ethnic diversity. In addition to student diversity, there have been changes to how students navigate their postsecondary education, such as an increase in enrollment in for-profit institutions, the ability of students to take advantage of reverse transfer, and an increase in students enrolled in community college.

In the fall of 1990, there were just under 12 million students enrolled in colleges and universities (Table 4). By fall of 2014 nearly 18 million students were enrolled, an increase of 34 percent. This growth can be partially explained by population growth, increased high school graduation rates, and changes in the labor market (Bastedo et al., 2016). Additionally, there was a considerable influx of students enrolling in colleges outside the traditional, public, 4-year sector, including a large growth of the for-profit sector. "In 1976, there were only 55 for-profit institutions in the United States. By 2012, underfunded public institutions were unable to absorb the growing demand for college education, and the number of for-profit colleges swelled to 533 two-year and 782 four-year institutions" (Schudde & Goldrick-Rab, 2016).

Table 4. Undergraduate fall enrollment in degree-granting postsecondary institutions, by sector: 1990 and 2014

Sector	1990		2014	
	Number	Percent	Number	Percent
Total	11,784,640	100.0	17,780,778	100.0
Public, 4-year or above	5,202,482	44.1	6,849,312	38.5
Private not-for-profit, 4-year or above	1,947,821	16.5	2,768,306	15.6
Private for-profit, 4-year or above	112,483	1.0	990,254	5.6
Public, 2-year	4,393,693	37.3	6,458,558	36.3
Private not-for-profit, 2-year	20,130	0.2	39,583	0.2
Private for-profit, 2-year	47,530	0.4	348,207	2.0
Public, less-than 2-year	55,913	0.5	51,232	0.3
Private not-for-profit, less-than 2-year	614	0.0	9,641	0.1
Private for-profit, less-than 2-year	3,974	0.0	265,685	1.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Enrollment Survey, Fall 1990 and Fall 2014.

Growth can be defined not only by how many students are enrolling in colleges and universities, but also in the changing demographics and the rise of historically marginalized groups of students enrolled in the postsecondary education system. College is often touted as the great equalizer, yet whether or not a student attends and graduates from college is greatly affected by their family’s income, parent’s educational attainment, wealth, and parent’s occupational attainment (Hout, 2012). While there have been many changes in American postsecondary education, Schudde (2016) poignantly remarks that “educational expansion resulting in changing student composition is one of the most fundamental shifts” over the last half century. The roots of this change can be seen in the changing expectations of high school seniors. Increasingly, high school seniors expect to graduate from a 4-year college. “Gaps in educational aspirations across race and ethnicity and income have fallen dramatically” (Roderick, et al., 2009 p. 186) so that expectations have increased among all students regardless of race, gender, and socioeconomic status (NCES, 2006).

However, the actual college enrollment continues to have disparity among these groups (Roderick, et al., 2009). While White students made up 78 percent of the student demographic in 1990, they now make up just more than half, with Hispanics making up 16 percent of the student population on college campuses in 2014 (Table 5). This change is not due to a decrease in the number of White students enrolled, as that number has remained fairly constant. With a greater number of racially diverse students attending college, the numbers of Minority Serving Institutions, and particularly Hispanic Serving Institutions (HSIs), has been increasing. Under

Title V of the Higher Education Act, HSIs are non-profit institutions for which at least 25% of the full-time equivalent students are Hispanic. According to the Hispanic Association of Colleges and Universities (2016), “The number of HSIs is rapidly growing, from 137 institutions in 1990 to 189 in 1994, to 229 in 2000, to 245 in 2005, to 311 in 2010, and 435 in 2014.”

While there is much to celebrate with regard to the increase in traditionally underserved groups’ participation in higher education, there is still more work to be done to close the racial and ethnic gaps. The enrollment of Black students and Hispanic students is still not proportional to these groups’ representation among the broader U.S. population. Similarly, there is a persistent gap in the retention and graduation rates of these groups when compared to White students (Bastedo, Altbach, & Gumport, 2016). Additionally, many of these underserved students attend institutions that are lower in the prestige structure in postsecondary education. For example, the student bodies at for-profit institutions are disproportionately made up of women, African Americans, or Hispanics, and they are more likely to be older than those who attend not-for profit institutions. Additionally, while a growing proportion of today’s college students are from underserved racial demographics, questions remain about whether the experience of these students is equitable on college campuses: for example, do they experience hostile climates and prejudice, and how well do institutions serve these students educationally? Several prominent higher education scholars have documented that students who are from historically underserved racial and ethnic backgrounds continue to have inequitable experiences in higher education (Bensimon 2007; Cabrera et al., 1999; Hurtado & Carter, 1997).

Table 5. Undergraduate fall enrollment in degree-granting postsecondary institutions, by race/ethnicity and gender: 1990 and 2014

	1990		2014	
	Number	Percent	Number	Percent
Total	11,784,674	100.0	17,780,778	100.0
Race/Ethnicity				
White	9,149,718	77.6	9,303,662	52.3
Black or African American	1,102,757	9.4	2,398,489	13.5
Hispanic	722,112	6.1	2,930,092	16.5
American Indian/Alaska Native total	96,883	0.8	138,398	0.8
Asian or Pacific Islander total	497,947	4.2	1,044,012	5.9
Two or More Races	—	—	549,097	3.1
Race/ethnicity Unknown	—	—	885,715	5.0
Nonresident Alien	215,257	1.8	531,313	3.0
Gender				
Men	5,298,018	45.0	7,759,661	43.6
Women	6,486,656	55.0	10,021,117	56.4

— Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Enrollment Survey, Fall 1990 and Fall 2014.

Beyond race, there are several specific student identities that have received a great deal of attention in the scholarly literature, policy streams, and media. Women experienced dramatic growth in higher education enrollment in the 1970s and 1980s, and women have maintained more than half of the undergraduate enrollment in higher education from 1990-2014. Although women are now represented in higher education, there remain questions as to whether women experience equitable treatment on college campuses. For example, the policy stream has focused on addressing sexual assault and harassment on college campuses and the types of campus programs and supports that can provide safer campuses for women (McMahon, Banyard, & McMahon, 2015). Additionally, over the past three decades, students who identify as lesbian, gay, bisexual, transgender, and queer (and/or questioning) (LGBTQ) have been the focus of important discourse in higher education (Renn, 2010). Certain colleges and universities have considered how to accommodate and support these students better (Zamudio-Suaréz, 2016b). In an example of how colleges and universities are responding to broader policy contexts about LGBTQ issues, colleges and universities have had to respond to the HB2 law in North Carolina that focused on restricting bathroom use for transgendered people to their born

gender identity. Colleges and universities have considered their role in supporting transgendered students within this policy context (Stripling, 2016).

- The growing diversity of the student body in postsecondary institutions raises questions on the different and conditional nature of the college experience, such as: Do students with different identities have different outcomes and satisfaction with college? Additionally, do they have different kinds of experiences in college?
- Given that the increase in diversity offers students opportunities to foster skills which are beneficial for career and democracy, how do students learn to interact across differences? What experiences do they have with diverse others, and how do these experiences relate to outcomes?

DIVERSITY IN NATIONAL POSTSECONDARY SAMPLE SURVEYS

An area of strength in the three postsecondary surveys is the ability to use the data to examine trends in the changing diversity of the student body. Researchers wishing to use these surveys to examine differences over time in student demographics will find data on race, ethnicity, gender (limited, male/female), socioeconomic status, disability, dependents, and immigration status, among others. Also available are data on the enrollment patterns of students, including stop-out and transfer patterns, which addresses one way in which student enrollment has changed.

While standard demographic elements do exist in the surveys, one area that could be enhanced in the national postsecondary sample surveys is by expanding student demographics to include information more relevant to today's students. There are a few specific student identities that have received a great deal of attention recently in higher education literature that may warrant inclusion on these surveys. Descriptions of some important identity considerations are indicated below, but additional experts may be consulted about other identities that are increasing in importance in college students.

A key demographic under federal discussion is regarding the increase of LGBTQ students. For example, the surveys ask about gender as a binary fixed response with no flexibility beyond the male/female dichotomy. The addition of questions that include transgendered students might allow for alternative responses to this question as well as perceptions of inclusion and resources for these students on campus. The surveys also do not ask any questions about sexual orientation. In addition, the surveys include in-depth questioning of mental health diagnoses, but perhaps looking at developmental delays, such as autism, and diseases, such as alcoholism and other addictions, would add to the understanding, given the rise in the reporting of these disorders or disabilities. Another important identity that may emerge, given the current issues with regard to immigration and the Middle East, is student religion, although

we recognize that NCES is legally prohibited from collecting information about religious affiliation.

It is important to understand the racial, ethnic, and gender makeup of today's institutions of postsecondary education; however, it is also increasingly important to understand how this diversity affects student experience. None of the surveys currently inquire about perceptions of diversity and equality on campus, nor do they ask students to describe the availability of diverse clubs/organizations or whether traditionally racially and ethnically underserved students feel comfortable and accepted (e.g. based on gender or race). To understand the effect of the increasing diversity on today's campus, one would want to know about interactions that take place both with students as well as with faculty and administration.

GLOBALIZATION

Once again, mirroring the broader economic and political systems, globalization is a trend that has influenced higher education in the past 30 years in a variety of critical ways. Globalization is reflected in three main ways in higher education in 2016: the increased proportion of college students who study in the U.S. who are from other nations (i.e. international students), the increase in U.S. college students who study abroad in other nations, and the increased attention that colleges and universities pay to globalization as a core function of the institution. Given that higher education prepares students for future citizenry and careers, and each of these now takes place in a global context, postsecondary education institutions have responded accordingly. Globalization has changed the make-up of the student body in the United States, the college education experience for U.S. students, the reach of U.S. institutions, and the missions of these institutions.

One clear example of the way globalization has shaped postsecondary education in the United States in the past few decades is the increase in international student enrollment in U.S. institutions. According to the 2015 *Open Doors* report from the Institute for International Education (IIE), the number of international students studying abroad has increased more than twofold from 1995 to 2014, and the 2014–15 year marked a 10 percent increase over the previous year. Although enrollment in U.S. postsecondary education overall has increased during this period, the increase in international student enrollment has outpaced the increase in U.S. student enrollment. International students in 2014–15 made up 4.8 percent of the student body in U.S. institutions. About half of international students are undergraduate and half are graduate students. Although these students come from all over the world, a vast majority of international students studying in the United States come from Asia, with almost one-third from China and 14 percent from India in the 2014–15 academic year.

Students in the United States have also continued to increase studying abroad in the past two decades. A review of the data in IPEDS illustrates that institutions in all sectors in the United

States have increased their study-abroad offerings (Table 6). Overall, the number of institutions offering study abroad programs has increased by nearly 23%, with the largest growth taking place in the private, 2-year sectors. Almost six times the number of U.S. college students studied abroad in the 2013–14 academic year, when compared to 1993–94 (IIE 2015). Furthermore, 9.9 percent of U.S. students studied abroad at some point during their degree program. A majority of these students studied in Europe (53.3%), with a smaller proportion studying in Latin America (16%), Asia (12%), and other regions. They spanned a variety of Science, Technology, Engineering, and Mathematics (STEM), business, and social science fields of study. Most of the U.S. students (60%) who studied abroad did so for a short duration (8 weeks or less), and another third studied abroad for one semester.

Table 6. Number of institutions offering study abroad programs, by sector and percent change: 2004-05 and 2015-16

Sector	2004-05	2015-016	Percent change, 2004-05 to 2015-16
Total	1,613	1,980	22.8
Public, 4-year or above	487	578	18.7
Private not-for-profit, 4-year or above	871	997	14.5
Private for-profit, 4-year or above	33	91	175.8
Public, 2-year	219	300	37.0
Private not-for-profit, 2-year	1	5	400.0
Private for-profit, 2-year	2	9	350.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Institution Characteristics Survey, 2004-05 and 2015-16.

While the changes in the college students that represent globalization are striking (both sending U.S. students to study abroad and receiving international students), an even broader shift in postsecondary education institutions has taken place regarding internationalization. Institutions have begun to include globalization in their funding, administration, policies, and even their missions. To illustrate this emphasis on a national scale, the American Council on Education (2012) articulated a model for comprehensive internationalization of U.S. colleges and universities. This model embeds globalization in the institution, from articulating the institutional commitment to globalization in strategic planning and broad communications, to administrative structures, to integrating globalization in the curriculum, and advancing international partnerships. The report also detailed the results of a survey across all postsecondary education sectors with regard to their internationalization. According to this survey, 93 percent of doctoral institutions, 78 percent of baccalaureate institutions, and 50

percent of associate institutions report an acceleration in their institution's emphasis on globalization. These institutions reported trends such as internationalizing the curriculum at the home campus, expanding international student recruitment and staff, and creating additional international partnerships with other colleges and universities, governments, and corporations. In addition, 55 percent of institutions responding to the survey reported they had developed specific international or global student-learning outcomes. The number of institutions offering programs delivered outside the United States for mainly non-U.S. students (e.g., international branch campuses) has grown considerably in recent years: 153 institutions offered such programs in 2010 compared with 101 in 2006.

With globalization increasing its reach across every facet of postsecondary education institutions (missions, administration, funding, students, curriculum), this has important implications for the NCES postsecondary sample surveys. Students' postsecondary pathways increasingly include a segment outside the U.S. Students are receiving more international content and interacting more with students across the world. This new context gives rise to several questions that could be pursued with additional data on international students and international experiences. For example:

- How does including international experiences in a college pathway bear on completion for different students in different majors? How does it bear on, learning, and career placement, and success?
- Once their degrees are completed, do international students continue to live in the United States?
- For the U.S. students who study abroad — do they enter fields that are global in nature?
- Is the accelerated focus on globalization in the postsecondary environment making the United States more competitive in the global economy?

GLOBALIZATION IN THE NATIONAL POSTSECONDARY SAMPLE SURVEYS

Of all the trends in the postsecondary education landscape today, globalization, perhaps, is the least covered in the national postsecondary sample surveys. Across the three surveys, each included a few items about the students' nationality and spoken languages. The BPS and the B&B survey also ask whether students had studied abroad. Yet, these very basic questions do not give a depth of understanding about the global experiences that students receive during college, nor do they aid in understanding whether college students are being prepared to work and live in a global society. For example, the surveys do not ask about experiences at international branch campuses, the length of the study-abroad experiences, their intercultural interactions during these experiences, the courses they took with a global emphasis, or their interaction with international students. Such questions that examine the breadth and depth of international experiences that students garner during college may clarify how pervasive the

globalization phenomenon is for U.S. colleges and universities, and whether these experiences are associated with important career and civic outcomes.

CHANGING PROFESSORIATE

While there have been large changes in the student body at today's colleges and universities, there have similarly notable changes in the professoriate, the structure of today's postsecondary faculty. In particular, there have been changes in the types of faculty positions (from tenure to adjunct), in the work of faculty (higher workload and more regulation), and in the demographics of faculty (more women and faculty of color). At the time when most of the higher education longitudinal surveys were developed, faculty on college campuses were largely tenure-track, with the autonomy and academic freedom that accompanied such a position. However, as postsecondary education shifted towards a more consumer-based model, those working for colleges and universities experienced diminished autonomy in what they taught, how they taught, and the work they did outside the classroom (Schuster and Finkelstein 2006).

There are three categories of faculty that are relevant to this section: tenured faculty, tenure-track faculty, and adjunct or non-tenure track faculty. Tenured faculty are those faculty who have received tenure at their institutions. According to the AAUP (2017), "A tenured appointment is an indefinite appointment that can be terminated only for cause or under extraordinary circumstances such as financial exigency and program discontinuation." Tenure-track (or pre-tenure) faculty are those faculty who are in positions that have the opportunity to receive tenure, but who have not yet obtained tenure (typically within the first six years of employment). Adjunct or non-tenure track faculty include all faculty who do not have the opportunity to receive tenure. This category represents a broad array of different faculty roles and centrality to the institution. For instance, a non-tenure track faculty member could teach one course at several different institutions or could be a full-time instructor at one institution.

There has been a shift in academic faculty positions from the traditional tenured or tenure-tracked faculty to more non-tenure track positions. Previously, discussions about the American professoriate had often centered on the differences between tenured and pre-tenure (but tenure track) faculty. Today, the current landscape has changed to discuss the move from tenure-track to adjunct faculty. Non-tenure-track and part-time faculty have less autonomy than tenured or tenure track faculty and are increasing in the proportion of the faculty (Altbach, 2016). Add to this the effect of the economic recession of 2008 with budgets deteriorating, and there is a slowing of the academic profession (Slaughter & Rhoads, 2016) and the reduction of faculty tenure-track lines in favor of faculty lines that are more fluid and responsive to economic fluctuations on college campuses. Indeed, only about half of new appointments are traditional tenure-track (Bastedo et al., 2016). Table 7 makes clear the shift

from tenure/tenure-track to non-tenure-track. From 1990 to 2013, the number of faculty who are not on the tenure track has increased from 18 percent to 38 percent. The number of overall faculty has also decreased from just over 800,000 to less than 700,000.

Table 7. Number and percentage distribution of full-time faculty, by tenure status: 2009 and 2013

	2009		2013	
	Number	Percent	Number	Percent
Total	811,802	100.0	689,593	100.0
Tenured	476,000	58.6	302,812	43.9
Tenure-track	185,944	22.9	123,813	18.0
Not on tenure-track	149,858	18.5	262,968	38.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Staff Survey, Fall 2009 and Fall 2013.

In lieu of tenure-track positions, institutions are offering a variety of alternatives including multiyear contracts, annual contracts, and less-than-annual contracts. Several Florida colleges have put this trend into practice, including Florida Gulf Coast University and Florida Polytechnic University, which attempted the model where no positions on campus were tenure-track. Others are formalizing what “non-tenure-track/contract” positions look like, such as University of Denver. As rank increases, it is most common for faculty to be on a multi-year contract (Table 8). Most non-tenure-track faculty are on annual contracts. Contracts for less than one year (such as an academic term) are most often used with instructors, lecturers, and positions with no academic rank.

Even among faculty in tenure-track positions, the requirements of promotion became more difficult to attain, as the push for grants, research, and publications began to overshadow the teaching of students (Bastedo et al., 2016). Meanwhile, faculty are still being held to increasingly high expectations in the classroom, as the shift to performance-based funding formulas increase (Arum & Roksa, 2011). In addition, those in the professoriate have experienced an increase in workload scrutiny, resulting in longer hours and calling for more accountability. Some states have begun to require workload reports annually, while others require minimum teaching loads (Levine & Nidiffer, 1993).

Table 8. Faculty rank of full-time faculty, by non-tenured contract status: 2014-15

Rank	Non-tenured contract status							
	Total		Multi-Year Contract		Annual Contract		Less Than Annual Contract	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	271,356	100.0	89,801	33.1	162,425	59.9	19,130	7.0
Professor	26,074	100.0	12,283	47.1	12,200	46.8	1,591	6.1
Associate Professor	30,362	100.0	12,973	42.7	16,220	53.4	1,169	3.9
Assistant Professor	66,190	100.0	21,741	32.8	41,873	63.3	2,576	3.9
Instructor	70,746	100.0	20,509	29.0	43,293	61.2	6,944	9.8
Lecturer	37,777	100.0	13,214	35.0	20,522	54.3	4,041	10.7
No Academic Rank	40,207	100.0	9,081	22.6	28,317	70.4	2,809	7.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Human Resources Survey, 2014-15.

In addition to changing faculty categories and roles, the American professoriate has also had shifting demographics. The gender and race diversity on campuses in tenured and tenure-track positions has increased. In 1990, women faculty made up 23 percent of tenured faculty and 39 percent of tenure-track faculty. By 2013, the proportion of women in these positions increased to 37 percent and 48 percent, respectively. Table 9 below illustrates that this change did not result from a large increase in the number of women hired into these positions, but rather from the decline of men in tenured and tenure-track positions. What appears most likely is that as men retired or left their positions, they were replaced by near-equal numbers of men and women in non-tenure-track positions. The above only takes into account gender among those with “faculty status” designation. Table 10 below shows that even in 2013, women were still less likely to be in positions on campus with the “faculty status” designation (i.e., non-faculty).

Table 9. Number and percentage of full-time faculty who are tenured, by gender: 1990 and 2013

Gender	1990					
	Tenured		Tenure-Track		Not on Tenure-Track	
	Number	Percent	Number	Percent	Number	Percent
Total	476,000	100.0	185,944	100.0	149,858	100.0
Men	367,090	77.1	112,828	60.7	81,598	54.5
Women	108,910	22.9	73,116	39.3	68,260	45.5

Gender	2013					
	Tenured		Tenure-Track		Not on Tenure-Track	
	Number	Percent	Number	Percent	Number	Percent
Total	302,812	100.0	123,813	100.0	262,968	100.0
Men	189,681	62.6	63,925	51.6	125,221	47.6
Women	113,131	37.4	59,888	48.4	137,747	52.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Staff Survey, Fall 1990 and Fall 2013.

Table 10. Faculty status of full-time faculty, by gender: 2013

Gender	With Faculty Status		Without Faculty Status	
	Number	Percent	Number	Percent
Total	689,593	100.0	12,345	100.0
Men	378,827	54.9	5,805	47.0
Women	310,766	45.1	6,540	53.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Staff Survey, Fall 2013.

Examining historical racial differences in faculty tenure demonstrates the evolution in hiring decisions in faculty positions (Table 11). In 1993 (the earliest this information was collected in IPEDS), 89 percent of tenured positions were held by faculty who were White. By 2013, this rate had decreased to 79 percent. Although a great majority of tenured faculty were still white, there was an increase in faculty of color over time. There are also differences in these gains across specific racial groups. The gains of African American faculty and Hispanic faculty were proportionally lower than that of Asian faculty (the proportion of African American faculty has increased only slightly during this period). Also at work was an increasing propensity to hire diverse faculty into non-tenure-track positions.

Table 11. Tenure status of full-time faculty, by race/ethnicity: 1993 and 2013

Race/Ethnicity	1993					
	Tenured		Tenure-Track		Not on Tenure-Track	
	Number	Percent	Number	Percent	Number	Percent
Total	271,866	100.0	110,698	100.0	141,411	100.0
White	242,895	89.3	90,068	81.4	117,116	82.8
Black	10,172	3.7	6,698	6.1	7,541	5.3
Hispanic	5,362	2.0	3,225	2.9	3,167	2.2
Asian or Pacific Islander	11,169	4.1	6,516	5.9	6,704	4.7
American Indian/Alaska Native	725	0.3	438	0.4	662	0.5
Race/Ethnicity Unknown	195	0.1	363	0.3	329	0.2
Nonresident Alien	1,348	0.5	3,390	3.1	5,892	4.2

Race/Ethnicity	2013					
	Tenured		Tenure-Track		Not on Tenure-Track	
	Number	Percent	Number	Percent	Number	Percent
Total	302,812	100.0	123,813	100.0	262,968	100.0
White	238,200	78.7	82,320	66.5	198,198	75.4
Black	14,367	4.7	7,743	6.3	16,633	6.3
Hispanic	12,610	4.2	5,785	4.7	10,966	4.2
Asian or Pacific Islander	26,802	8.9	13,911	11.2	18,583	7.1
American Indian/Alaska Native	1,202	0.4	525	0.4	1,437	0.5
Two or More Races	1,709	0.6	993	0.8	1,878	0.7
Race/Ethnicity Unknown	4,527	1.5	4,351	3.5	7,521	2.9
Nonresident Alien	3,395	1.1	8,185	6.6	7,752	2.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Staff Survey, Fall 1993, 2013.

Each of these large-scale changes (the move from tenure-track positions to adjunct/contract, as well as workload shifts and increase in diversity of the faculty) has had a significant impact on the changing professoriate. Many faculty are retiring later, more are being hired into non-tenure-track positions held by multiyear, annual, and less-than-annual contracts, and morale has decreased (Cummings & Finkelstein, 2012). While the increase in diversity of the faculty by gender and race is compelling, women and faculty of color continue to be under-represented in

prestigious institutions, in many specific fields (such as STEM), in higher ranking positions, and in leadership positions (Schuster & Finkelstein, 2006).

Understanding the changing professoriate in U.S. postsecondary education would shed light on several important policy and practical concerns. For example:

- How do students experience the difference between tenure and non-tenure track faculty? Are they aware of or affected by these broad changes in the faculty?
- Do students of color in institutions with greater proportions of faculty of color fare better than those in institutions with mainly White faculty? For example, do African American faculty serve as role models for African American students, and is this associated with stronger outcomes?
- Does the changing professoriate have an influence on the way students are mentored and advised?

CHANGING PROFESSORIATE IN THE NATIONAL POSTSECONDARY SAMPLE SURVEYS

The topic of the changing professoriate is not covered in any of the three postsecondary sample surveys. In fact, BPS is the only survey that asks students about their interaction with faculty. None of the three surveys ask about the students' knowledge of whether their faculty are tenure-track or adjunct, their opinions of adjunct faculty, the availability of faculty, the practical experiences of faculty that apply to the subject-matter of the course, or satisfaction with teaching at large. Understanding how students experience the changing professoriate would provide useful information regarding the influence of the changing faculty on students and the college educational experience.

While understanding students' experience of the changing professoriate, their understanding of faculty categories, and their classroom experiences would shed light on how the increase in adjunct faculty is changing postsecondary education institutions, perhaps this structural change in the professoriate also warrants consideration of a revival of the National Postsecondary Survey of Faculty. While not reviewed in this paper, this additional postsecondary sample survey was last administered through NCES in the 2003–04 academic year. Gaining information on faculty perspectives of the changing professoriate and faculty reports of teaching practices and student interaction could offer a more robust understanding of how the changing professoriate is altering the broader system of postsecondary education in the United States. Perhaps this major trend would suggest the utility of reviving the National Postsecondary Survey of Faculty.

INCREASED EMPHASIS ON ACCOUNTABILITY AND ASSESSMENT

With a backdrop of increasing costs, increasing governmental investment, and increasing enrollment, the public and policymakers' questioning of the value of postsecondary education

has been prominent since the 1990s. These questions have largely taken the form of an increased emphasis on accountability. While postsecondary education has enjoyed tremendous autonomy over time in comparison to other education sectors like K-12 education (Altbach, Berdahl, & Gumpert, 2005), the past two decades have, arguably, shown the greatest emphasis on accountability (and therefore lower institutional autonomy) in the history of postsecondary education. This increase in accountability has taken place at the confluence of many forces, including questions about rising college costs, critique of U.S. education at large, and an emphasis on evidence-based decision-making (Campbell, 2015; Ewell, 2008). There are two particular trends with regard to accountability that took place during this time: performance funding and learning-outcomes assessment.

In a time before the economic recession of 2008, postsecondary education enjoyed strong growth in enrollment; states were considering how to both ensure that their investment in postsecondary education was worth the cost and to incentivize institutions to increase completion rates and enroll students. In the late 1990s and early 2000s, state funding became associated with performance indicators in certain states, termed “performance funding.” For example, state systems might award additional funding or decrease funding based on whether institutions met retention and completion goals. At the height of the performance-funding movement in 2000, 18 states had adopted performance funding (McGuinness, 2016). Research on the effects of performance funding demonstrates that institutions use more data and understand state priorities, but often do not show increases in retention or completion (Dougherty & Reddy, 2011). Other institutions chose a different form of performance accountability, namely, “performance reporting,” where institutions are required to report metrics as a benchmarking and transparency tool for state systems. Most recently, performance funding has made a revival in the late 2000s and the 2010s with several states re-adopting this policy (e.g. Washington and Indiana)

A second accountability trend has been the increased emphasis of accreditors on student learning outcomes. The emphasis on learning outcomes has been a complementary accountability question to cost, as the public has wondered what students learn during college given the rising costs (Bok, 2006; Carey, 2012). The assessment movement has been burgeoning since the 1980s, but it became far more advanced following K–12 testing from No Child Left Behind in 2005 when the Spellings Commission considered using standardized measures of critical thinking (such as the Collegiate Learning Assessment) to report on student learning at the postsecondary institutional level to the public. Although the Spellings Commission ultimately did not recommend mandating such a standardized test due to institutional push back, accreditors increased their attention on institutions reporting progress toward defining, measuring, and reporting on student-learning outcomes (Ewell, 2002, 2008).

Since that time, a veritable industry has grown up around learning assessment in college (Campbell, 2015). Take, for example, a report from the National Institute on Learning Outcomes Assessment, which cited that institutions had grown dramatically in just 4 years (from 2009 to 2013) in the number of learning assessments, the varieties of learning assessments, and the uses for these learning assessments, ranging from accreditation to institutional improvement (Kuh et al., 2014). As an example, the American Association of Colleges and Universities, has examined what employers consider to be Essential Learning Outcomes in college (Rhodes, 2001)—and these range from cognitive (such as critical thinking and quantitative literacy) to interpersonal (e.g. teamwork) to intrapersonal (e.g. ethical reasoning).

Simultaneous to the learning-outcomes movement, scholars in the learning sciences have come to understand a great deal about effective college teaching and learning practices over the past few decades. Although the two movements (assessment and learning sciences) run along parallel tracks and rarely inform each other (Neumann & Campbell, 2016), the knowledge acquired from the learning sciences has an important bearing on how we understand college teaching and learning. For example, studies from the learning sciences demonstrate that some subject matter core ideas can be taught more effectively by experts who map the field and intersect specific pedagogy with each idea (Bransford, Brown, & Cocking, 2000; Shulman, 2004). Additionally, students' prior knowledge of the subject matter (academic, lived, and cultural) bears on learning in college courses (Bransford, Brown, & Cocking, 2000). We also know much more about the importance of metacognitive knowledge (e.g., how to study for recall versus analysis) and the importance of cognitive schema in the role of expertise (Bransford, Brown, & Cocking, 2000). These ideas are only a few among a growing field that bear on how college students learn. However, these ideas have largely not been discussed within the higher education assessment policy discourse (Neumann and Campbell 2016). Instead, the higher education assessment policy discourse (particularly with regard to assessment at the institution level) typically focuses on generalized learning outcomes across all subject matter and without the context of learners' backgrounds and experiences (e.g., measuring "critical thinking" or assessing the level of "student engagement").

Although assessing institutional quality has been an important trend in the higher education landscape, it is important to note here that the NCES surveys are intended to be used for statistical and research purposes and not for accountability. Nevertheless, the purpose of this paper is to describe the important trends and observe where the surveys provide relevant data and where those are lacking. As such, we discuss data from the surveys that could be relevant to the assessment movement here, with the understanding that the current surveys are not intended to serve this purpose. Nor do we suggest that the NCES surveys should take such a role. Yet, we observe that accreditors and institutions have turned to student learning as an important form of evidence and that the learning sciences have shed insights on how college

students learn, and therefore there could be opportunities for NCES postsecondary surveys to provide additional information on the student learning experience in college (if that were desirable and intended within the purpose of the survey). For example:

- Do students in different kinds of institutions with different levels of resources experience effective teaching and learning practices?
- Do students who attend classes in online, hybrid, and in-person classes have equal opportunities to experience these practices?
- Do these practices matter more for students who take traditional or stop-out/transfer patterns through college?
- Are these practices associated with success beyond immediate learning, such as career and life success and satisfaction?

ACCOUNTABILITY AND ASSESSMENT IN THE NATIONAL POSTSECONDARY SAMPLE SURVEYS

Overall, the national postsecondary sample surveys include many useful items about college student pathways that have been used by institutions and accreditors toward accountability², but very little content on learning outcomes. In terms of data that could be used to document institutional effectiveness (e.g., inputs, outputs and outcomes), all three postsecondary surveys include items about student enrollment, retention, and completion. In each of the surveys, these topics could be reported by race and socioeconomic status, making the surveys useful to understanding access and success for underserved students. Furthermore, the B&B survey includes several items on alumni employment and salaries, which could be used by institutions to document alumni outcomes and to help them consider how they can improve their educational experience for students. Each survey collects comprehensive information on college majors, and as such, the enrollment, retention, completion, and employment outcomes could be documented and reported for different fields of study.

Regarding documenting the quality of institutions, the BPS and B&B also delve into students' level of satisfaction and use of student services. Of the three surveys, the BPS focuses most considerably on this topic, including several questions on students' level of satisfaction with the institution and their studies, their sense of belonging to the institution, their use of various academic and student support services, the importance of these surveys to their college experience, and their level of academic confidence. The NPSAS does not include information on satisfaction or use of services.

² The legislative mandate for NCES does not permit it or its restricted-use license-holders to engage in accountability activities using sample survey data. However, statistical findings, survey instruments, or assessment instruments can be used by third-parties (such as consortia or accreditors) towards these ends.

None of the three surveys include learning-outcomes assessment. There are no questions that examine either core outcomes for specific majors or broader outcomes, such as critical thinking or intercultural competence. This is in stark contrast to the secondary and early childhood national student level data collection efforts that include such assessments (e.g. the National Assessment of Educational Progress, NAEP). We see this as a complex concern. The lack of nationally standardized learning outcomes at the college level has meant that higher education research cannot pursue questions about what college environments foster college student learning outcomes with a nationally representative sample of college students using NCES data. The K-12 nationally representative assessments have been fodder for research about the kinds of environments, schools, and practices that bring forth learning outcomes—several studies from NCES (e.g. America’s Charter Schools, 2004) and countless others from education scholars (e.g. Carnoy & Loeb, 2002; Geier, Blumenfeld, Marx, Krajcik, Fishman, Soloway, & Clay-Chambers, 2008; Grodsky, Warren, & Kalogrides, 2009). Without nationally representative learning outcomes assessments at the college level, there is a missed opportunity in terms of the lack of knowledge produced about effective educational interventions and practices. At the same time, we caution that the assessments in K-12 and their uses for accountability have also caused unintended consequences, including poor curriculum changes, pedagogical practices that are not equitable, or teaching to the test (Abrams, Pedulla, & Madaus, 2003; Au, 2007; Hursh, 2007). We are further concerned that the incredible diversity of institutions, institutional missions, and the students that institutions serve make a standardized measure of college learning, perhaps, more problematic in the higher education sector. Indeed, there have been a number of debates among higher education scholars, faculty, assessment experts, and practitioners about whether it is possible to accurately assess student learning in college in a standardized way (e.g., Campbell, 2015; Dowd & Tong, 2007; Ewell, 2008; Espeland & Sauder, 2007). As such, given both the importance and also complexity in assessing student learning outcomes at the college level, on the whole, we are not convinced that the benefits of creating such assessments outweigh their possible costs and unintended consequences.

One possible way forward would be to focus on the educational experiences within colleges and universities rather than on documenting learning, which has been very difficult to define and measure at the higher education level. Beyond learning outcomes, there was very little content in the surveys that examined college teaching or in-class experiences. The items that examined student experiences focused most considerably on support services and satisfaction with their education or major. Perhaps the one exception are the items in the BPS that examine student-faculty interaction. Yet, no questions examine effective college teaching practices, such as active learning, using students’ prior knowledge, or metacognition. The emerging research from the learning sciences that indicates certain practices that are associated with learning (e.g., Bransford, Brown, & Cocking 2000) may provide a firm basis for future national surveys to investigate such practices in nationally representative college samples.

FUTURE CONSIDERATIONS AND EMERGING TRENDS

In addition to the well-documented trends that have affected postsecondary education since the late 1980s, there are two rapidly emerging areas that will have significant implications for future postsecondary data collection at NCES. The first of these, learning analytics, involves the measurement, collection, analysis, and reporting of data about learners and their contexts for the purposes of understanding and optimizing learning and the environments in which it occurs (see Ferguson 2012 for a robust discussion of learning analytics and big data). Although there are a number of factors that are driving change in this area, the rise of online education and the learning management systems that they employ, together with an increasing societal interest in “big data,” are perhaps the most important (Ferguson, 2012). However, since learning analytics has largely been confined to the for-profit higher education sector in the United States and the open universities of Europe, there has been limited mainstream interest among traditional scholars of higher education (although interest is growing), and NCES data collection efforts reflect this. For example, the ways in which students have interacted with, and benefited from, working with learning management systems has not been documented, nor have the associated costs to individual students.

The second rapidly emerging area, academic capitalism, involves the increasing number of ways in which colleges and universities are treating higher education policy as a subset of economic policy (Slaughter & Leslie, 2001). Often driven by decreasing state support or simply increased cost pressures, the rise in such market and market-like behaviors as enrollment management, increased partnerships with the private sector, and private college counseling suggests that new approaches are being brought to traditional problems, and not surprisingly, these approaches have implications for NCES data collection. For example, as enrollment managers embrace nontraditional indicators of students’ ability to succeed as a means of gauging academic preparation for collegiate work (such as work or military experience), what are these indicators and how can data on them be collected? In another example, now that industry-academic collaborations are commonplace in higher education institutions (Slaughter & Leslie, 2001), how is this affecting the socialization of doctoral students? And for individuals using private college counseling services, how are these services being used and what are the associated costs and benefits? Finally, the rise of noncredit and certificate programs that are often for-profit in nature bears consideration. At what point will higher education compete with such programs? How can the national postsecondary sample surveys capture such students who are not enrolled in postsecondary education institutions that are sampled, but provide an important glimpse into alternative postsecondary pathways? Taken together, the rise of learning analytics and academic capitalism — two important features of the emerging postsecondary education landscape — offer the potential to provide important insights to both researchers and educational policymakers, but only if the requisite data is collected.

CONCLUSION

Although no suggestions are offered in this paper at the individual question level, argument provides that an understanding of the importance of the broader sociocultural and historical context, as well as the specific trends in postsecondary education today, may allow for a NCES data collection to be more relevant to current policy needs in higher education. If NCES can somehow incorporate the most important issues in postsecondary education today and anticipate future needs, scholars, policymakers, and practitioners will reap the benefits for decades to come in the form of evidence-based practices and policy and more relevant theories. Prior iterations of the national postsecondary sample surveys did a nice job in anticipating certain trends, such as increasing tuition and student debt, changing racial demographics, and the increase in nontraditional pathways in higher education. Additionally, the surveys offer important information about student enrollment, graduation, and career outcomes. Yet, there are certain topics that are important to understanding the U.S. postsecondary context today that were left off of the surveys completely or barely covered. In particular, we observe the lack of attention to technology in the classroom, international and cross-cultural experiences, and teaching and learning experiences.

In addition to these topics, we notice the particular slice of the student experience that is seen and unseen in the national postsecondary sample surveys. For example, far more is known about tracking students than about what those students experience during college. In addition, more is known about what they look like going in and what happens when they come out than what they are doing either in or out of the classroom while they are in higher education. This observation cuts across several major trends. For example, the increase in students of color can be accounted for, but not what they experience or how all students interact across differences. Also, the data can show a greater number of international students and how many college students study abroad, but the extent of these international and intercultural experiences is not known. We can document which students pursue particular majors, but how the teaching and learning process unfolds for these students is still in question. The data could tell us which students make more money after college, but not whether the higher salary is associated with skills learned during college or certain experiences during college. Future surveys may consider not only how to track students, but also how to measure the depth and diversity of their experiences, both in and out of the classroom.

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