

# Comparing Postsecondary Education Survey Data Elements

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## Background

To reduce the burden that NCES data collections impose on institutions, improve the reliability of submissions across institutions, and maximize institution cooperation for its sample surveys, NCES is developing a protocol to standardize administrative record collections (ARCs) from postsecondary institutions. Standardized ARCs will allow institutions to anticipate the data that will be requested and, therefore, will enhance their ability to fulfill requests in a timely fashion across such NCES sample surveys.

To develop a standardized protocol, NCES first seeks to document the relationships between the data elements it collects in its postsecondary sample surveys and data elements defined or collected by such other sources as the Common Education Data Standards (CEDS) project, the College Board, and the National Association of State Student Grant and Aid Programs (NASSGAP). In addition to documenting relationships among data elements, NCES seeks to compare selected estimates that are derived from NCES's sample survey data with those reported by these alternative sources.

The purpose of this report is to document the similarities and differences between NCES sample survey data (with a specific focus on financial aid) with data collected and reported elsewhere. The goal of this effort is to reduce administrative burden among respondents by aligning NCES data collections with other efforts at the state and national levels without compromising long-standing trend data.

In addition to defining and collecting different specific data elements, administrative data on U.S. postsecondary education vary on larger dimensions that must be taken into account when defining data elements to be collected and aligning them across data collection and reporting efforts. In the next section of this introduction we describe a number of these dimensions and discuss general considerations concerning institution-level data.

### **Dimensions of Administrative Data Related to U.S. Postsecondary Education**

In addition to the state longitudinal data systems (SLDS) in various stages of development among the 50 states NCES and RTI staff identified 17 administrative record collections (ARCs) of postsecondary student data that have some overlap with NCES sample surveys (table 1).<sup>1</sup> Although a full exposition of each of these ARCs is beyond the scope of this report, table 1 summarizes key characteristics of these 17 ARCs along four dimensions: topics covered, unit of analysis, student education level, and universe covered.

#### **Topics Covered**

As shown in the blue section of table 1, institutions' administrative data cover a range of topics related to students' movement through postsecondary education. Before students enroll, they apply for admission, supplying information on their demographics and academic preparation for postsecondary study. Once accepted, information on their enrollment, transfer, retention/persistence, and completions is critical to tracking students' progress. Among the majority of students who apply for and receive financial

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<sup>1</sup> The ARCs included in table 1 do not represent an exhaustive list of data collection or reporting efforts that rely upon administrative data but rather those NCES staff encounter with some frequency when answering questions from the public or other government agencies.

aid to pay for their education, the type and amounts of aid offered, accepted, and awarded are recorded as well. Among the ARCs listed in table 1, several collect data on these and other topics, whereas others are focused on one or two topics.

### Unit of Analysis

Some ARCs, like Achieving the Dream, the National Student Clearinghouse (NSC), and SLDS, collect data at the individual student level, and others collect data that have already been aggregated to the institution or state level. In a limited number of cases, ARCs collect data at other levels of aggregation, such as the College Board's survey of major lenders regarding private student loans, data which can only be meaningfully interpreted when aggregated to the national level.

The level of aggregation of the original data has implications for the comparability of the estimates derived from the data. For example, IPEDS collects each institution's average net price for a specific group of students, providing institutions with detailed instructions for computing that net price. In contrast, NCES's postsecondary sample surveys collect the amount of each of various expenses incurred and forms of aid received for each sampled student. These data are used to compute multiple versions of net price, one of which corresponds to the definition operationalized in the IPEDS instructions to institutions. Therefore, although IPEDS covers the universe of institutions and is not subject to sampling error, NCES sample survey estimates may be more precise because they are based on individual students' specific data rather than weighted averages of groups of students.

Similar to variation on the unit of analysis, data may be collected and reported at varying levels of detail or specificity. For example, understanding the size and impact of

the Supplemental Educational Opportunity Grant (SEOG) program will vary depending on whether participation in this program is reported by type of program (received SEOG or received federal grants other than Pell), by the precision of the category (received need-based grant aid or received federal need-based grant aid), or by receipt versus amount (received a SEOG or received \$XXX in SEOG funding).

### Student Education Level

All of the ARCs described in table 1 apply to either undergraduates or both undergraduates and graduate students except NSF's Graduate Students' and Postdoctorates in Science and Engineering Survey (GSS), which covers only graduate students. Because NCES postsecondary sample surveys include both groups, ARCs that include graduate students are more useful for comparison than are those limited to undergraduates, other things equal.

### Universe

Many ARCs cover the universe of all postsecondary institutions in the United States, essentially equivalent to the NPSAS universe of Title IV institutions. Other ARCs exclude less-than-2-year institutions, are limited to certain states, or restrict the universe to selected types of institutions such as public institutions or community colleges. To the extent that ARCs are nationally representative either of all institutions or a clearly identifiable subset such as 2-year and 4-year institutions, the resulting data can be employed as a benchmark for NPSAS estimates. For example, in NPSAS the student interview is the only comprehensive and reliable data source for information on private (alternative) student loans, but whether students can accurately distinguish private student loans from such other loans as residential mortgages, home equity lines of credit, and

auto loans is unclear. To gauge the plausibility of private loan estimates that are based on self-reported data, NPSAS staff consult the College Board's estimates of private student loans, which are based on its proprietary survey of major lenders, and adjust the NPSAS estimates as needed for consistency.

## **Organization of the Report**

This report begins to document the relationships between NCES postsecondary sample surveys' and other entities' efforts' estimates by presenting detailed comparisons of the data elements, selected derived variables, and the definitions of both among NCES postsecondary administrative data collections and three other efforts chosen by NCES postsecondary sample survey staff: the data elements proposed by CEDS (thus far) and the estimates collected and reported by the College Board and NASSGAP. The remainder of this report describes the methods used to compare NCES data elements or derived variables with those of CEDS, the College Board, and NASSGAP; presents detailed matrices documenting the comparisons of NCES data elements and derived variables with these ARCs; and discusses the implications of these comparisons for NCES's standardized administrative data collection.

## **Methodology**

The first step for comparing administrative records collection data elements involved obtaining or creating lists of data elements used in various postsecondary data collection efforts of interest. The NPSAS:12 student records data element list served as the basis for comparison. Lists were also created or obtained from the version 4 postsecondary domain

of CEDS<sup>2</sup>, the College Board's Annual Survey of Colleges, and NASSGAP's annual survey of state-funded expenditures for postsecondary student financial aid. Data elements from CEDS, the College Board, and NASSGAP were reviewed to exclude any element not relevant to NPSAS or NCES studies. For example, the NASSGAP survey collects information about state agency general practices and leadership. Such details were deemed not useful for this analysis and, therefore, were eliminated.

Once the lists of data elements were reviewed and edited, the development of comparison matrices began. Three matrices were created, each comparing NCES postsecondary sample survey data elements to one of the three other sources of data collected from institutions. Table 2 presents comparisons between the NCES and CEDS data elements; table 3 presents comparisons between NCES and the College Board's data elements; and table 4 presents comparisons between NCES and NASSGAP's data elements.

In all three matrices, the NCES data elements, option sets, and definitions are presented in the first three columns, and the same information for the comparison source is presented in the following three columns. The final column discusses differences/distinctions between the two data sources' definitions of the data element and any apparent implications thereof. Table 5 summarizes the comparability of the data elements across the four sources.

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<sup>2</sup> CEDS is an ongoing effort with multiple versions of standards for the following domains of data elements: early learning, K12, postsecondary, adult education, workforce, assessments, and learning resources and standards. At the time of this writing, the postsecondary domain data elements are in version 4.

## General Discussion

Of the three sources, CEDS contained the most directly comparable items to NPSAS:12. For some elements, however, NPSAS:12 collected a level of detail not matched by CEDS specifications. For example, NPSAS budget items are specific to the individual student, while CEDS budget specifications are limited to average costs and charges at the institution level.

The College Board's Annual Survey of Colleges contained many data elements that were similar to those in NPSAS:12. Similar to the CEDS budget items, the most distinct difference among related NPSAS:12 and College Board data elements is the unit of analysis of the two surveys. NPSAS:12 data elements are almost entirely obtained at the student level, and therefore had a higher degree of specificity than related College Board elements, which are collected at the institution level.

Of the three sources, NASSGAP data contained the fewest data elements that were comparable to NPSAS:12 elements. NASSGAP surveys state agencies tasked with administering state financial aid. Consequently, many of the state-specific agency and program data elements are not relevant or comparable to those in NPSAS:12 student records by design. The most comparable elements from the NASSGAP survey were those related financial aid programs administered by states.

## Conclusion

Although other ARCs' data elements and estimates derived from them may not strictly align with NCES sample survey ARCs, they can be useful for benchmarking and otherwise checking the plausibility of NPSAS estimates. This function is especially

useful for topics with only one data source within a NCES data collection, such as the private student loan example discussed above. In addition, as the CEDS effort moves forward, NCES can continue to engage with CEDS to maximize stability of financial aid estimates from administrative records over time.

**Table 1: Summary chart of ARC topics covered and other characteristics, by source**

	Demographics	Enrollment (credits, courses taken)	Completions, field of study	Financial aid	Retention or persistence	Transfer	Other (admissions, learning, employees, etc.)	Unit of analysis collected (individual student-level or aggregate data)	Student level (undergraduate (UG), graduate (G), or Both)	Universe	Additional topics and other notes
<b>Common Education Data Standards (CEDS)</b>	●	●	●	●			●	NA	Both	NA	Standards for ARC rather than ARC itself
<b>College Board's Trends in College Pricing/Student Aid/Annual Survey of Colleges</b>	●		●	●			●	aggregate	UG	survey covers 2- and 4-year institutions; report sections vary	Alternative to NPSAS for data on private loans
<b>National Association of State Student Grant Aid Programs (NASSGAP)</b>				●				aggregate	Both	all institutions	
<b>Association of American Universities Data Exchange (AAUDE)</b>	●	●	●	●			●	individual	Both	62 major research universities	Includes two Canadian universities
<b>American Association of Community Colleges (AACC) Voluntary Framework of Accountability (VFA)</b>	●		●		●	●	●	aggregate	UG	community colleges	Job placement; remedial success
<b>American Association of State Colleges and Universities (AASCU)/Association of Public and Land-grant Universities (APLU) Voluntary System of Accountability (VSA)</b>			●		●	●	●	aggregate	UG	public 4-year institutions	Measures of learning and engagement; almanac information
<b>Achieving the Dream</b>	●	●	●				●	individual	UG	community colleges, mostly with substantial at-risk populations	Remedial placement and success
<b>Common Data Set (CDS)</b>	●	●	●	●			●	aggregate	UG	2- and 4-year institutions	Coordinated by college guide publishers
<b>Complete College America (CCA)</b>	●	●	●			●	●	aggregate	UG	public institutions in 34 states	Remedial success
<b>Consortium for Student Retention Data Exchange (CSRDE)</b>			●		●		●	aggregate	UG	2- and 4-year institutions	
<b>IPEDS</b>	●	●	●	●	●	●	●	aggregate	Both	all institutions	Includes non-Title IV institutions
<b>National Association of Student Financial Aid Administrators (NASFAA)</b>				●			●	NA	Both	all institutions	Institutional loan survey is extrapolated by College Board
<b>National Student Clearinghouse (NSC)</b>	●	●	●		●	●		individual	Both	all institutions	Outcomes must be calculated
<b>National Science Foundation (NSF) Graduate Students and Postdoctorates in Science and Engineering survey (GSS)</b>	●		●	●				aggregate	G	institutions w/grad. degrees in NSF fields	Modal source of support

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Southern Regional Education Board (SREB)		●	●		●		●	aggregate	Both	public institutions in 16 states	Largely overlaps with IPEDS; funding; tuition; time and credits to degree
State Higher Education Executive Officers (SHEEO) finance report		●		●			●	aggregate	Both	public institutions	Appropriations; educational revenue; most statistics calculated per FTE student
State Longitudinal Data Systems (SLDS)	●	●	●	●	●	●	●	individual	Both	states(s); usually public institutions only	Enormous variation by state
Student Achievement Measure (SAM) Project			●		●	●		aggregate	UG	2- and 4-year institutions	Deliberate partial overlap with VSA & VFA

Table 5: Summary table

NCES Postsecondary Sample Surveys		Common Education Data Standards	College Board	NASSGAP
<b>Enrollment</b>				
Degree Program and Progress				
1	Degree Program	*	#	
2	Associate's Type <i>(Only applicable if degree program is Associate's)</i>			
3	Master's Type <i>(Only applicable if degree program is Master's)</i>			
4	Doctoral Type <i>(Only applicable if degree program is Doctoral)</i>			
5	Class Level		#	
6	Expected to complete degree requirements by [6/30/??] ?			
7	Cumulative (unweighted) GPA	*		
Baccalaureate Degree <i>(Only applicable for graduate students)</i>				
8	Received baccalaureate degree?	*	#	
9	Month Received <i>(mm)</i>	*		
10	Year Received <i>(yyyy)</i>	*		
Major <i>(Only complete one)</i>				
11	CIP code	*		
12	Current Major			
13	Undeclared			
Initial Enrollment				
14	First Enrolled at this Institution Month <i>(mm)</i>	#		
15	First Enrolled at this Institution Year <i>(yyyy)</i>	#		
16	First-time Beginning Student?	*	#	
17	Transferred Credits from Another Institution?		#	
Number of Required Clock Hours <i>(Only applicable for clock hour programs)</i>				
18	For Program	*		
19	Per Week			
Tuition Charged <i>(Only applicable for enrollment from 7/1/2011 to 6/30/2012)</i>				
20	Total Tuition and mandatory fees charged	#	#	
21	Residency for Tuition Purposes	*	#	

**Key**


	No comparable variable
*	Close or exact match/Easily Mappable
#	Similar but with distinct differences

Table 5: Summary table

NCES Postsecondary Sample Surveys		Common Education Data Standards	College Board	NASSGAP
<b>Enrollment–Continued</b>				
Enrollment status & Number of hours enrolled per term				
22	[Term Name 1-12 (Start Date – End Date)]	*	#	
23	Hours [Term 1-12]			
Placement Tests				
24	[Placement Test 1-5]	*	*	
25	[Placement Test 1-5] Month (mm)			
26	[Placement Test 1-5] Year (yyyy)			
27	[Placement Test 1-5] Score	*		
<b>Aid Awarded</b>				
Budget				
28	Local residence	*	#	
29	Tuition/fees	#		
30	Books/supplies	#	#	
31	Room and board	#	#	
32	Health insurance	#	#	
33	Transportation	#	#	
34	Computer technology	#	#	
35	All other expenses	#	#	
36	Total cost of attendance	#		
37	Budget period			
Federal Aid				
38	Pell grant	*	#	#
39	Subsidized Stafford/Direct Loan	*	#	#
40	Unsubsidized Stafford/Direct Loan	*	#	#
41	Parent PLUS loan	*	#	#
42	Graduate PLUS loan	#	#	#
43	Federal TEACH grant	#	#	#
44	Perkins loan	#	#	#
45	Federal SEOG grant	#	#	#
<b>Aid Awarded–Continued</b>				
State Aid				
46	Federal work-study	*	#	#
47	Iraq & Afghanistan Service grant	#	#	#
48	Veteran benefits	#	#	#
49	Federal health professions loan	#	#	#
50	Federal health professions disadvantaged loan	#	#	#
51	[State aid program 1]	#	#	#
52	[State aid program 2]	#	#	#
53	[State aid program 3]	#	#	#
54	[State aid program 4]	#	#	#
55	[State aid program 5]	#	#	#
56	[State aid program 6]	#	#	#
57	[State aid program 7]	#	#	#
58	[State aid program 8]	#	#	#
59	[State aid program 9]	#	#	#
60	[State aid program 10]	#	#	#
61	[State aid program 11]	#	#	#
62	[State aid program 12]	#	#	#

Table 5: Summary table

	NCES Postsecondary Sample Surveys	Common Education Data Standards	College Board	NASSGAP
	<b>Institution Aid</b>			
63	[Institution aid program 1]	#	#	#
64	[Institution aid program 2]	#	#	#
65	[Institution aid program 3]	#	#	#
66	[Institution aid program 4]	#	#	#
67	[Institution aid program 5]	#	#	#
68	[Institution aid program 6]	#	#	#
69	[Institution aid program 7]	#	#	#
70	[Institution aid program 8]	#	#	#
71	[Institution aid program 9]	#	#	#
72	[Institution aid program 10]	#	#	#
	<b>Aid Awarded—Continued</b>			
	<b>Institution Aid—Continued</b>			
73	[Institution aid program 11]	#	#	#
74	[Institution aid program 12]	#	#	#
	<i>Graduate Aid (Only applicable for graduate students)</i>			
75	Graduate fellowship/scholarship	#		#
76	Graduate Federal fellowship	#		#
77	Graduate Federal traineeship	#		#
78	Graduate teaching assistantship/stipend	#		#
79	Graduate research assistantship/stipend	#		#
80	Other graduate assistants/tutors/readers stipends	#		#
81	Graduate student tuition waivers	#		#
82	Graduate faculty/staff tuition waivers	#		#
83	Graduate institutional work study	#		#
84	Graduate institutional loan	#		#
	<b>Government/Private Aid</b>			
85	Scholarships/grants from private organizations	#	#	#
86	Employer paid tuition	#	#	#
87	ROTC/armed forces grants	#	#	#
88	WIA/job training/vocational rehabilitation	#	#	#
89	Bureau of Indian Affairs grants	#	#	#
90	Scholarships/grants from outside state agency	#	#	#
91	Private loans	#	#	#
92	DC tuition assistance grant	#	#	#
	<b>Aid Awarded—Continued</b>			
	<b>Other/Specify Aid</b>			
93	Other aid [1-5] name	#	#	
94	Other aid [1-5] type	#	#	
95	Other aid [1-5] source	#	#	
96	Other aid [1-5] amount	#	#	