Reported progress under the Student Right-to-Know Act:

How reliable is it?

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ABSTRACT

The Student Right-to-Know Act requires colleges to provide institution-specific information on graduation rates for students initially enrolling full-time in the fall term. Not all students, however, initially enroll full-time or in the fall term. We use longitudinal data on academic, degree-seeking students from the 1996/2001 Beginning Post-Secondary Survey to identify those students for whom statistics are and are not reported under the Act and to track their relative progress at two- and four-year institutions. We also examine the intra-institution correlation between reported and unreported students' progress to determine if the published statistics will at least allow relative comparisons. Our results indicate that the published progress rates are substantially higher than the progress rates for the unreported populations. Furthermore, while these rates are relatively comprehensive for and comparable across four-year institutions, they are neither for two-year institutions. Policy makers and prospective students will not make efficient decisions using such unreliable information.

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Reported progress under the Student Right-to-Know Act: How reliable is it?

More and more students are pursuing higher education yet there continues to be substantial concern about graduation rates and institutional accountability. This concern is stressed in a recently released report (known as the Spelling's report) on the future of higher education (U.S. Department of Education 2006). The Spelling's report calls on colleges and universities to provide consumers and policymakers with easy access to reliable and useful information on student success outcomes that allow cross-institution comparisons. An earlier step in this direction was the 1990 Student Right-to-Know Act (RTK Act) which required colleges to report graduation rates for degree- or certificate-seeking students entering their institutions. As institutional reporting focuses on the fall term and the Act focuses on full-time students, the reporting requirements under the Act effectively exclude students initially enrolling on a part-time basis or in a non-fall term. Furthermore, institutions only track degree receipt at their own institution. The Spelling's report notes that these limitations fail to provide pertinent information about and for nontraditional students who frequently enroll at multiple institutions and who constitute a significant and growing share of the college-going population. From a social and economic perspective, the absence of accurate and reliable information suggests that decision making by both students and decision makers allocating tax dollars may be suboptimal, resulting in the inefficient allocation of resources.

We use longitudinal data on a nationally representative sample of students seeking an academic degree from the 1996/2001 Beginning Post-Secondary Survey to estimate the value of the information available under the RTK Act. Looking separately at those entering two- and four-year institutions, we first calculate the fraction of first-time students who enroll full-

time in the fall term. This tells us the fraction of the enrolling population for whom progress measures are likely reported (henceforth called the 'reported' population) under the RTK Act. The Spelling's report indicates that the reported information is frequently not representative of all students, particularly for two-year institutions. Hence, second, we compare progress towards a degree by the reported population with progress towards a degree by those for whom progress data are not reported (the 'unreported' population). This tells us how representative the information provided by the RTK Act will be of progress for the entire student population. Third, even if the level of progress is quite different for the reported and unreported samples, when the progress of both samples at the same institution is highly correlated, the information provided under the Act will still support some degree of relative comparison across institutions. If there is substantial positive correlation, institutions that report relatively high success rates under the RTK Act will have relatively high success rates for all entering students. To examine the degree to which this is the case, we calculate the degree of intra-institutional correlation in the progress of the reported and unreported samples. This type of comparison is a specific concern of the Spelling's report and is of paramount importance for comparison shopping by students in the higher education market place.

These three analyses allow us to determine how comprehensive, how representative, and how comparable the information made available under the RTK Act is of student progress at two- and four-year institutions. Armed with such knowledge, one can suggest how much more information may need to be collected to provide decision makers, both students and policy makers, with the useful and reliable information they need to make good decisions.

Background and Literature Review

The Spelling's report (Department of Education 2006) is a call to action to policymakers, educators, administrators, accrediting bodies, and students to bring the U.S. higher education system into the 21st century. The report recognizes the changing landscape of higher education world wide and concludes that U.S. institutions of higher education are not responding adequately to those changes and are losing market share to their global competition. One of the six recommendations stemming from this report is for increased transparency and accountability. Colleges and universities are extolled to provide more information about cost, price, and student progress so that prospective students and policymakers can reliably compare different institutions. We focus here on student progress measures.

Some data on graduation rates are already available to prospective students. The Student Right-to-Know (RTK) Act of 1990 requires all institutions of higher education receiving any federal assistance to provide information regarding their graduation rates. More specifically, institutions are required to provide information on the fraction of certificate- or degree-seeking students who complete or graduate within 150 percent of the "normal time". [1] Focusing on academic degree-seeking students, this effectively asks two-year colleges to report three-year graduation rates and four-year colleges to report six-year graduation rates. Institutions are also permitted to count students who transfer to a four-year institution as 'successes'. However, information on transfers is generally difficult to obtain and is not always reported.

[1] The law allows schools to exclude students who leave school for service in the armed forces, on an official church mission, or with a recognized foreign aid service.

In theory, institutions could be required to report this information for all entering students. In practice, this is not the case. First, institutions typically collect information only for those initially enrolling in the fall term. The reporting of fall enrollment data reflects standard institutional reporting practices.[2] Second, reporting is required only for full-time students. Yet about half of all undergraduate enrollment (Department of Education 2006) and two-thirds of enrollment at two-year institutions (Digest of Education Statistics 1997, Table 177) is part-time.

Legislators may have limited reporting to full-time students in part to control for substantial cross-institutional heterogeneity in enrollment paths. Those enrolled on a part-time basis can not expect to complete the credits required for graduation as rapidly as those enrolled on a full-time basis. A comparison of schools with substantially different proportions of part-time students would mask institutional effectiveness in graduation rates. However, enrollment status during the first term is not necessarily indicative of subsequent enrollment patterns. Some of those who initially enroll full-time will likely enroll part-time or otherwise interrupt their schooling at a later date (see O'Toole, Stratton, and Wetzel 2003 and Horn 1998 for statistics on the prevalence of part-time and interrupted enrollment). Thus, the decision to report on progress only for those initially enrolled full-time will not eliminate all cross-institutional heterogeneity in enrollment status.[3]

While the information reported under the Act is intended to allow prospective students to gauge their likely progress both at a given institution and across institutions, the reported

[2] Institutions have the option of reporting for the full year, but this option is rarely pursued. None of the four-year institutions in our sample and only one of the two-year institutions used the full year option.

[3] Evidence to this effect is presented by Astin (2004) who essentially suggests that this heterogeneity makes a comparison of even the reported statistics misleading. One of the issue papers released with Spelling's report (Miller 2006) advocates reporting progress for students based on their characteristics and program of study in order to at least partially address this concern.

statistics may be misleading. First, these data may capture less than half of those enrolled at an institution.[4] Second, these rates are institution-specific. Individuals who do not complete their degree at one institution may well do so at another. This is particularly true for those students who seek a bachelor's degree but begin their studies at a two-year institution. Transfer rates may be reported but there is no attempt to measure success at the next institution. From a national perspective, concern should focus on graduation rates as a whole, not the rates at a particular institution. Third, even though progress may be quite different for the unreported as compared to the reported sample, the published statistics may still be of some value to prospective students making cross-institutional choices and to policy makers comparing institutional effectiveness. This will be the case if the progress of the reported and unreported samples is highly positively correlated within an institution. Such a correlation is not guaranteed on theoretical grounds. Some institutions may be better suited to meet the needs of full-time students and others may be better suited to meet the needs of part-time or delayed entry students. For example, flagship residential institutions may serve full-time students better whereas urban institutions may do a better job serving part-time students busy with commitments to employment or family. If urban institutions attract relatively more part-time students and are relatively more successful at graduating them as compared with flagship residential institutions, this relative success will not be apparent in the available statistics.

Data

To evaluate the reliability of the information provided under the RTK Act, we use longitudinal data on a nationally representative sample of post-secondary students seeking an

[4] This issue is clearly recognized by the National Center for Education Statistics as it is one of the motivations for conducting a separate IPEDS Graduation Rate Survey (see Broyles 1998).

academic degree. Specifically, our data consist of the restricted access micro data from the 1996-2001 Beginning Post Secondary (1996/01 BPS) survey as conducted by the National Center for Educational Statistics (NCES) of the Department of Education. This survey tracks a sample of students who first enrolled during the 1995-1996 academic year and follows them for a period of up to six years (spring 2001) no matter their subsequent enrollment status. We restrict our analysis to the 8,999 individuals for whom data are available through spring 2001. We then exclude those individuals not seeking an academic degree as well as enrollment at less than two year institutions and other institutions not likely to offer credit toward an academic degree (such as beauty, training, and trade schools). Individuals who only enrolled in a summer term during the first academic year or who failed to provide sufficient personal information are also dropped. Our final sample consists of 7,314 respondents, of whom 1,012 initially enrolled in a 2-year institution.

The BPS survey includes a wide range of information. The demographic information includes gender, race, ethnicity, and age. Household information includes parent's educational background, household income, and the marital and parental status of the respondent. Institutional information includes the type of institution first attended (two-year versus four-year), the term first enrolled (fall or not), and the initial enrollment intensity (part-time versus full-time). Information on any other post-secondary institution attended through the spring of 2001 is also listed. Finally, the date any Associate or Bachelors degrees were received is recorded.

Results

We begin by identifying the fraction of our degree-seeking, first time population for whom progress reports are likely available under the RTK Act – the fraction of full-time, fall term entrants. The larger the fraction of reported students, the more comprehensive is the picture presented by the data reported under the RTK Act. We distinguish throughout between those who initially enrolled at a four-year versus a two-year institution, calling these the four year and two year samples respectively. We find that 5.8% of the four year sample and 21.4% of the two year sample initially enrolled in a term other than the fall. The data also indicate that 9.6% of the four year sample and 47.7% of the two year sample initially enrolled part-time. In total, 13.8% of those in the four year sample and 57.1% of those in the two year sample have enrollment characteristics that place them in the unreported sample.[5] These figures confirm that while the published statistics cover a fairly comprehensive set of students at four-year institutions, they cover less than half of the population attending two-year institutions.

For prospective students seeking to make informed decisions, there are two questions of interest. First, how likely are they to graduate if they begin at a particular institution? Second, how comparable are graduation rates across different institutions? As regards the first question, distinguishing between the reported and unreported populations is unnecessary at a particular institution if the groups each progress towards a degree at the same rate. Conversely, if within a given institution the rates are substantially different for the reported and unreported subgroups, the graduation rate reported under the RTK Act will not provide useful or reliable information for students in the unreported population. With regard to the second question, comparing graduation rates across institutions, the reported rates are clearly

[5] All figures are weighted so as to replicate national statistics.

accurate only for students for whom reporting is required. However, if the success of those students for whom progress is not reported by the RTK Act is highly positively correlated with the success of the reported subgroup within each institution, then the reported success measures will provide a reliable basis for comparing one's relative probability of success across institutions, even when the absolute success rates are lower for the non-reported population.

Progress towards a Degree

We explore these issues one at a time, beginning with how representative reported progress towards a degree is for all first-time students. Our sample readily allows construction of progress measures for both reported and unreported populations. In addition, as our data follow individuals across time wherever they enroll, not just at the initial institution, we are able to report on progress towards a degree more generally rather than only at the institution first attended

Within the four year sample, we focus on BA degree receipt six years following matriculation. This is the statistic the RTK Act asks four-year institutions to publish. However we also identify the fraction graduating from a different institution than that initially attended and the fraction of students who are still enrolled in spring 2001 (the fraction who persist). The latter measure helps to capture the potentially longer time-to-graduation necessary for those who miss the initial fall term, or enroll part-time, or interrupt their enrollment. Such students are not failures; they simply take longer to succeed.

Success is more difficult to define and measure for the two year sample. Some of these individuals were seeking only an AA degree[6], whereas others may have started with the intention of transferring to a four-year institution. To accommodate the wide range of possible goals, we consider a number of alternative progress measures for the two-year institution sample: some for the three year time frame designated by the RTK Act and some for a six year time frame. Our three year outcome measures include: first, the fraction graduating with an AA degree; second, the fraction either graduating with an AA or attending a four-year institution in fall 1999; and third, the fraction who are not attending in fall 1999 and do not return prior to the spring of 2001 (the last term for which data are available in the 1996/2001 BPS). The second measure is roughly comparable to the completion rate two-year institutions are permitted to report under the RTK Act. The third measure identifies long term dropouts – those relatively unlikely to return. We follow up on this by also reporting on six year graduation and persistence measures. Specifically, we identify the fraction with a BA degree, the fraction with an AA degree (but no BA degree), and the fraction with no degree. For those with an AA degree or no degree, we further distinguish between those who are still attending in the spring 2001 term and those who are not. While these three year progress measures are not all inclusive, the six year measures for both the two and four year samples do take into account all possibilities.

Table 1 presents information on sample characteristics as well as progress towards a degree for the reported and unreported populations for the four year subset of the BPS Survey. Table 2 presents similar information for the two year subset. The top set of rows repeats the

[6] While some of those initially attending a four-year institution do seek a terminal AA degree, such students account for less than 3% of our four year sample and we do not track them.

information cited above regarding reporting status. The next set of rows reports on progress towards a degree. The remainder of the table shows various sample characteristics.

Progress measures in Table 1 indicate that 65% of the reported but only 26% of the unreported population achieve a BA within six years. This is a substantial difference. Furthermore, of those who graduate, about 13% graduate from a school other than that they initially attended. These graduates would not be counted as successes in the statistics published under the RTK Act, since those statistics focus on success at the institution initially attended. Clearly, however, these individuals are successful from a larger social or national perspective. Extending our measure of success to include the fraction still persisting at the six year mark increases the fraction that succeed by about 12 percentage points for the reported and 25.5 percentage points for the unreported populations. For both populations, the fraction of non-successes falls by about one-third. However, non-success is still far more common for the unreported as compared to the reported population. Over twice as many (49%) of the four year sample for whom progress figures are not required have neither earned a BA nor persisted with their studies as compared with 23% of those for whom progress figures are reported.

There is a similar disparity between progress for the reported and unreported populations beginning at two-year institutions. While 24% of the reported population received an AA degree within 3 years, only 7% of the unreported population does so. If moving to a four-year institution is considered progress, 49% of the reported but only 17% of the unreported population show progress after three years. Finally, 51% of the unreported population without a degree fails to continue their studies beyond the third year, as compared to only 40% of the reported population. Differences between the reported and unreported

populations attending two-year institutions are also large for the six year progress measures. Both BA and AA degree receipt are substantially higher for the reported as compared to the unreported population. The fraction without a degree still attending is similar between the populations, but the fraction of these persons attending a four-year institution is over fifty percent higher for the reported as compared to the unreported populations (67% versus 43%). Finally, the fraction not attending that has no degree is over 50% larger for the unreported as compared to the reported population (62% versus 40%).

Overall, these results demonstrate that progress towards a degree is substantially worse for those students who do not initially enroll full-time in the fall term. Prospective students who enroll in these non-traditional patterns should not expect to progress at the rates indicated by the data published under the RTK Act. Since the reporting requirement of the Act covers relatively few of those beginning at two-year institutions, the progress measures reported under the RTK Act by two-year institutions are particularly unrepresentative of progress at these institutions.

The sample characteristics reported in Tables 1 and 2 indicate that, particularly for the four year sample, the individuals for whom progress is likely reported have substantially different characteristics than the individuals for whom progress is not reported. Blacks, Hispanics, older persons, married persons, parents, independent persons, those from lower income households, and those with less educated parents are all more likely to be in the unreported population. Not surprisingly, many of these characteristics are also the characteristics associated with part-time or 'nontraditional' enrollment. Policymakers concerned with access to higher education may be particularly concerned to note that it is

progress by these historically underserved populations that is so poorly reflected in the statistics available under the RTK Act.

Institutional Level Outcomes & Cross-Institutional Comparisons

While the graduation rates reported under the RTK Act may not accurately reflect the progress of all students at a specific institution, these graduation rates might still provide prospective students with useful information when evaluating their relative probability of success across institutions. The reported graduation rates should provide useful, comparable information across institutions for those intending to enroll as full-time students in the fall term. The more interesting question is how comparable graduation rates are across institutions for those students whose progress is not reported under the RTK Act. If the progress of reported and unreported students is highly positively correlated within institutions, then those institutions that are relatively more successful at graduating students in the reported sample will also be relatively more successful at graduating students in the unreported sample. In this case, the relative standings or ranking of institutions by graduation rates reported under the RTK Act will provide useful information for comparison purposes to students in the unreported population. They may not know their particular probability of graduating, but they will know at what institutions they stand a relatively better chance of graduating. If, however, within-institution progress between the reported and unreported populations is not correlated or is negatively correlated, then the reported graduation rankings will either be useless or may actually provide misinformation to students in the unreported population.

To examine this possibility, we calculate the degree to which the institutional level outcomes of reported and unreported students are correlated. If the BPS sample were truly random, this would not be possible. The BPS data, however, were collected by first randomly selecting a set of institutions, and then gathering data on a random set of students at each of the selected institutions. This complex sample design means that there are often many students attending the same initial institution in the survey. This structure enables us to perform comparisons that otherwise would not be possible.[7]

Table 3 presents institution-specific information on population type and progress for the four-year (columns 1-4) and two-year (columns 5-8) institutions represented in our sample.[8] Certain characteristics of these samples are attributable to the sampling procedures of the BPS. First, the four year sample constitutes a larger number of schools (456) as compared to the two year sample (172). Second, on average more students were sampled from each of the four-year as compared to the two-year institutions (13.8 versus 5.9). Because this is a sample, some institutions in the BPS are represented only by students who initially enroll full-time in the fall term – the reported population, while some are only represented by students in the unreported population and some are represented by students in both the reported and the unreported populations. The homogenous classifications are more likely, the smaller the sample size drawn from a particular institution.

[7] Specifically, of the 456 four-year colleges represented in our four year sample, only 20 have only one student in the sample. Of the 172 two-year colleges represented in our two year sample, only 18 have only one student in the sample.

[8] All the measures reported in Tables 3 and 4 are constructed using longitudinal weights for each respondent and weighting institutions based on the number of respondents in attendance. The former adjustment accounts for oversampling of certain populations and the latter accords more weight to institutions whose characteristics are likely more accurately represented by this sample. Our results are essentially the same (available upon request) when respondent data are unweighted or institutions are treated with a uniform weight or a weight based on the weighted sum of the sample respondents initially in attendance.

Results for all the four-year and two-year institutions in our sample are presented in columns 1 and 5 respectively. These results are broken down in columns 2-4 and 6-8 based on the population types of the students we observe attending these institutions. We refer to the institutions represented by only one population type as homogeneous institutions and to the institutions represented by both population types as heterogeneous institutions. To calculate the degree to which progress of reported and unreported students is correlated within institutions, we must rely on data from the heterogeneous sample, however, we begin with a brief discussion of the homogeneous samples.

Homogeneous Institutions

Not surprisingly given the predominance of full-time students at four-year institutions, 41% of the four-year institutions sampled are represented only by students for whom data are required under the RTK Act. There are 13 institutions in the four year sample that are represented only by students for whom reporting is not required. However these are institutions for which the sampled population is very small, with only an average of 2 students sampled per school. Four-year institutions with homogeneous unreported populations account for less than 3% of all the four-year institutions in our sample. While many institutions have homogeneous reported populations, the majority of four-year institutions represented in our sample (56%) have heterogeneous populations.

As the two-year institutions in our sample are represented on average by much smaller student sample populations than the four-year institutions, we would expect to observe (all else equal) a larger fraction of homogeneous two-year institutions. However, only 23% of all the two-year institutions versus 44% of the four-year institutions are represented by students

of a single type and most of these constitute unreported rather than reported populations. This suggests that there is greater heterogeneity in the distribution of reported and unreported students amongst two-year as compared to four-year institutions, and confirms the higher probability of observing unreported students at two-year institutions.

As indicated by the student level statistics, average progress at institutions with only reported students appears to be greater than average progress at institutions with only unreported students. This is true for both four-year and two-year institutions. The average BA graduation rate as calculated from our sample is 74% for the set of four-year schools represented here by homogeneous reported populations. Conversely, the average graduation rate is only 24% for the set of four-year schools represented here by only students for whom reporting is not required. Similarly, the average 3 year AA graduation rate is 23% for those two-year schools with only reported students, but less than 3% for two-year schools with only unreported students in the sample. The average 6 year BA graduation rates are 34% for students who started at two-year schools with only reported students and 7% for the two-year schools with only unreported students in the sample.

Heterogeneous Institutions

Of greater interest is the information on schools represented by both reported and unreported students. There are 254 such four-year institutions and 133 such two-year institutions. On average about eighty percent of the students in the sample attending heterogeneous four-year institutions are students for whom reporting is required. Only about half of the students attending heterogeneous two-year institutions fall into this category. Table 4 breaks down the progress measures by reported and unreported populations and

presents measures of the degree of intra-institution correlation in the progress of these two populations within the sample of heterogeneous institutions. The top panel of Table 4 focuses on four-year institutions; the bottom focuses on two-year institutions.

Looking first at the four-year institutions with heterogeneous populations, the students for whom reporting is required achieve greater progress than the students for whom reporting is not required. The initial finding of differential progress between these populations in Table 1 could have reflected attendance at different institutions. However, Table 4 suggests that these populations progress differently, even when they are attending the same institution. The BA graduation rate is 61% for the reported students, or almost twice the rate of 32% for the unreported students, in the four year sample of heterogeneous institutions.

For benchmark purposes, we calculate the within group correlation between graduation and nonattendance rates. As every student must either have graduated, still be attending, or not be attending by Spring 2001, graduation and nonattendance rates for a given population should be highly negatively correlated. They are. The 6 year graduation rate and the rate of nonattendance have a correlation of -0.82 for the reported and -0.60 for the unreported populations. These correlations are significantly different from zero at even the 0.1% significance level.

Of particular interest is the degree of correlation between the 6 year progress measures for the reported and unreported populations within an institution. Our results indicate a positive intra-institution correlation of 0.31 between the BA graduation rates for the reported and unreported students and of 0.25 between the non-attendance rates for the reported and unreported students. Both of these correlations though low are significant at the 0.1% level. This indicates that four-year institutions that are more successful at graduating students in the

reported population are also relatively more successful at graduating students in the unreported population.

The results using 3 year progress measures for students entering two-year institutions are similar but substantially weaker. Progress as measured by AA degree receipt or transfer to a four-year institution is clearly lower for those students in the unreported population (18%) than for those in the reported population (50%), again suggesting that progress within institutions is different for these two populations. Likewise, the within-population benchmark correlations are – as they should be – negative and statistically significant at the 0.1% level even with the smaller sample sizes. However, while the intra-institution correlation measures between the reported and unreported population are positive, they are about one-third lower than those observed at four-year institutions and not nearly as statistically significant. Neither of those reported here are significant at the 5% level.

The results using 6 year progress measures for those entering two-year institutions are even weaker. Progress is still clearly greater for those in the reported population than in the unreported population and the benchmark correlations are as expected. However, none of the intra-institution correlation measures is statistically significant at even the 10% level and some of the correlation measures are actually negative. The smaller number of two-year institutions in the BPS sample will act to reduce the statistical significance of these correlation terms, but not the correlation itself. Even aggregating the sample to look at any degree received does not increase the magnitude or the significance of the cross-population intra-institution correlation. Two-year institutions that are more successful at graduating students in the reported population in three years may also be slightly more successful at graduating students in the unreported population in three years – but their six year progress rates for

reported and unreported students do not appear to be significantly correlated at all. Even though we limited our sample to those students who indicated they were pursuing an academic degree, students entering in two-year schools probably have more varied expectations or goals relative to those who start at four-year institutions. The intra-institution correlation may be low in part because the reported and unreported populations have different academic goals.

Comparison with Rates Published by the Department of Education

The analysis conducted thus far relies entirely on statistics derived from the BPS. These statistics should yield unbiased estimates of progress, but the small sample sizes mean these estimates have large variances. Institution-level data for the entire population of full-time, fall term matriculants are available from the Department of Education (DOE) under the RTK Act. A comparison of the BPS-based statistics with the DOE statistics provides a cross-check on our findings (details available upon request).

As a first step, we compare the institution-specific progress measures reported by the DOE with the BPS-based measures calculated off the reported sample. While both statistics focus only on those entering full-time in the fall term, we do expect some differences. The BPS statistics focus only on academic degrees and follow individuals as they progress across institutions, while the DOE statistics capture progress for students entering any program of study but only reflect progress at the initial institution attended.[9]

Looking at the 438 four-year institutions for which both BPS and DOE statistics were available, we find the average 6-year BA graduation rate is 16% higher as derived from the

[9] Some differences may also arise because of differences in the entering cohort. The BPS sample began college in the 1995-96 academic year, whereas the DOE statistics represent the fall 1997 cohort for four-year institutions and the fall 2000 cohort for two-year institutions.

BPS versus the DOE data (63% versus 53%). This differential is likely explained to a large extent by the fact that about 13% of those observed graduating in the BPS sample do so from a different institution than the one they initially attended. Adjusting the BPS statistics to capture only graduation at the initial institution, we find a 54% average graduation rate for those entering full-time in the fall term which corresponds closely to the DOE findings.

For the 123 two-year institutions for which both BPS and DOE statistics were available, the DOE reports higher average 3-year 'graduation rates' than the BPS (23.4% versus 19.2%). This difference may be a result of our focus on those seeking academic AA degrees.[10] The DOE figures also reflect completion of other programs of study such as certificate programs.

Next we calculate the degree of correlation between the DOE and BPS graduation rates. We adjust for the variance attributable to small samples in the BPS by weighting these correlations by the number of BPS respondents from whom the BPS statistics are calculated at each institution in order to weight data from institutions with lower expected variance more heavily. We find statistically significant positive correlations of 0.71 for the 6 year graduation rates in the 4 year sample and of 0.29 for the 3 year graduation rates in the 2 year sample when we restrict the BPS measures to include only those in the reported population. When we compare the BPS progress measures for the unreported population with the DOE measures, we find a lower, but still statistically significant correlation of 0.43 between the 6 year graduation rates in the 4 year sample, but a statistically insignificant correlation of 0.09 for the 3 year graduation rates in the 2 year sample.

[10] Information on transfer rates is also available from the DOE but is likely so different from the transfer rate identified in the BPS that we do not report a comparison here. All those who transfer can be identified using the BPS but we look only at enrollment in fall 1998 to identify transfers and thus may fail to capture individuals who transfer to a four-year institution earlier but are not enrolled in the fall of 1998.

These correlations match the results we obtained using only data from the BPS. Thus, whether we use BPS-generated or the officially reported DOE progress measures for the population of students entering full-time in the fall term, we still find that these measures will not help those entering either part-time or in the spring term at a two-year institution to make an informed judgment about how successful one institution is versus another at graduating similar students.

Implications

There are a number of interrelated policy implications that emerge from this analysis. First and foremost, to provide better information regarding graduation rates, institutions should report more detailed progress measures. Both graduation and persistence rates should be available for the entire population and for significant sub-populations, such as full-time and part-time students. These statistics should be available for multiple observation periods: perhaps 4, 6, and 8 year benchmarks for four-year institutions and 2, 3, 4, and possibly 6 year benchmarks for two-year institutions. A national data set should be constructed to follow individuals in order to measure progress as individuals move between institutions. Institutions could also report on the characteristics of their student population (gender, race, ethnicity, age, even the fraction working full-time). Such information provides both students and policy-makers a better profile of the students at an institution and identifies the institution's client base. This demographic information also provides some measure of institutional fit for the students and "fit" correlates with student success. This information will: first, help inform prospective students of their likelihood of graduating; second, help researchers identify particularly successful institutions; third possibly help evaluate best

practices at the successful institutions; and fourth, help policy makers compare like with like institutions.

Second, if the goal is to provide information to prospective students, then such information should be easily located on institutional web pages. Ideally, that information page should also list graduation rates and persistence rates for peer institutions so that students can better evaluate institutional effectiveness. In the private sector, market media such as *Consumer Reports* and automotive publications provide such data to aid comparison shopping. Consumers of higher education should have no less access to reliable data to compare higher education institutions, than do people buying vacuum cleaners or cars.

Third, while cross-institutional information is important to consumers choosing between different institutions, it is also critical to policy makers and educators trying to evaluate the effectiveness of different institutions. "Traditional" or "flagship" institutions that only accept full-time students will have very different graduation and persistence rates than urban institutions with large numbers of full-time workers and part-time students. These urban institutions serve a different client base and need to be judged and funded to reflect that fact. Appropriate peer institutions should be identified, as they are for prospective students, and relative comparisons made across such peer institutions rather than comparing vastly different institutions. It is hard to identify which institutions are "successful" without having some well-defined, reliable, and accurate measures of success.

Conclusion

The Spelling's report (Department of Education 2006) calls for increased accountability and transparency in post-secondary education. In particular, it calls upon

institutions to provide accessible and reliable measures of student success that all prospective students can use to evaluate their likelihood of graduating at that institution and to compare their probability of graduating across institutions. We examine the degree to which the statistics academic institutions currently provide on graduation rates under the 1990 Student Right-to-Know Act satisfy these criteria by using a nationally representative sample of first-time degree-seeking students from the 1996-2001 BPS survey. Reliable, accurate information is critical for optimal decision-making. Unreliable information likely leads to inefficient investment in human capital both for individuals and for the economy as a whole.

Institutions generally report graduation rates for those initially enrolled full-time in a fall term under the RTK Act. We find that these reporting criteria are generally quite comprehensive as regards enrollment at four-year institutions (where over 80% of first time students enroll full-time in a fall term), but not at two-year institutions (where less than half of first-time students begin full-time in a fall term). The published progress rates under the RTK Act for both two-year and four-year institutions correspond to the progress rates we obtain from the BPS survey for those initially enrolled full-time in a fall term (the reported population). However those published rates dramatically overstate progress for those who initially enrolled either part-time or in the spring term (the unreported population). Given that most of the degree-seeking students at two-year institutions are in the unreported population, the statistics provided on progress by two-year institutions are particularly unrepresentative and potentially misleading to prospective students.

To examine the degree to which the reported statistics are comparable across institutions, we measure the degree to which progress rates for the reported and unreported populations are correlated within-institutions. Within-institution measures of student progress

for four-year institutions indicate that those institutions that graduate more students in the reported population are also more likely to graduate more students in the unreported population. However, the correlation rate of 0.31 indicates this comparison will not be nearly as accurate for those entering in the unreported cohort as for those entering in the reported cohort.

By contrast, at two-year institutions within-institution correlations of student progress are substantially weaker or, even worse, show no correlation between the progress of students in the reported and unreported populations. This finding indicates that only those few students entering full-time in the fall term can reasonably use the success rates two-year institutions report under the RTK Act to compare their likelihood of progressing at different two-year institutions. The RTK Act provides students who fall into the unreported population at two-year institutions and who plan to receive an academic degree neither useful nor reliable information with which to make cross-institutional comparisons.

In summary, the Spelling's report calls upon institutions, their accrediting bodies, and the Department of Education to collect and provide ready access to data on progress towards a degree that is comprehensive, reliable, and comparable across institutions. The RTK Act took a first step in this direction. It was intended to provide prospective students with information they could use to make informed judgments about their chance of achieving an academic degree. It appears that the RTK Act does provide statistics for four-year institutions that are reasonably comprehensive, representative, and comparable across institutions. However, the same can not be said for the statistics reported by two-year institutions. The statistics reported for two-year institutions provide neither good absolute nor good relative measures within or across institutions for individuals likely to begin as part-time students or in a non-fall term at

those institutions. As the majority of those attending two-year institutions begin as part-time students or in a non-fall term, the information provided by two-year institutions under the RTK Act is clearly not representative of student enrollment for these institutions. Policy makers should follow the directives of the Spelling's report and revise reporting requirements in order to provide prospective students, policymakers, and educators with more reliable information regarding progress, particularly in two-year institutions.

Given the changing demographics in this country, growth in the labor force will come disproportionately from blacks, Hispanics, those from low income households as well as first generation college-goers who disproportionately are represented in the unreported population. The human capital obtained by these historically underserved students forms the basis for our future economic growth. We need to know how our post-secondary institutions are meeting the needs of this our future labor force. Clearly these concerns reinforce the necessity for providing accurate and reliable information to decision makers at the individual level and at the national level as regards the progress of those pursuing non-traditional enrollment paths.

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Table 1
Progress and Characteristics
for those initially attending a four-year institution

	Reported Population	Unreported Population
Reporting Status (% of total)	86.25%	13.75%
Did not begin in the Fall term	0%	42.6%
Initially enrolled part-time	0%	70.0%
Progress		
6-yr BA Degree	64.9%	25.5%
% of these graduating from a different institution	12.8%	13.0%
Still Attending[a]	12.0%	25.5%
Not Attending[a]	23.1%	48.9%
Sample Characteristics		
Female	55.58%	50.48%
White	77.55%	68.95%
Black	10.11%	15.31%
Other Race	12.34%	15.74%
Hispanic	10.08%	13.04%
Age	18.370	21.959
Currently or Previously Married Persons	1.97%	20.68%
Persons with Children	1.84%	18.69%
Independent	3.89%	30.71%
Dep. & Parent's Income < $40K	47.31%	39.79%
Dep. & Parent's Income > $40K	48.81%	29.50%
Parents Dropped Out of High School	1.86%	4.11%
Parent Completed High School	40.85%	55.60%
Parent Completed College or More	51.10%	34.21%
Parents Education Missing	6.20%	6.08%

Data are from the 1996/2001 BPS. Restricted to academic degree-seeking students beginning at a four-year institution in the 1995-96 academic year.
a: Attendance noted in the Spring 2001 term.

Table 2
Progress and Characteristics
for those initially attending a two-year institution

	Reported Population	Unreported Population
Reporting Status (% of total)	42.95%	57.05%
Did not begin in the Fall term	0%	62.6%
Initially enrolled part-time	0%	83.6%
Progress		
3-yr AA degree	23.9%	6.8%
Have AA degree or enrolled in 4-year institution by Fall 1998 (4th year)	49.1%	17.0%
No degree & not attending Fall 1998+	39.7%	51.4%
6-yr BA Degree	20.9%	6.5%
6-yr AA Degree (no BA), still attending[a]	14.3%	7.5%
6-yr AA Degree (no BA), not attending[a]	8.3%	5.4%
No degree, still attending[a]	15.8%	18.4%
% of these at a 4-year institution	67.1%	42.7%
No degree, not attending[a]	40.7%	62.1%
Sample Characteristics		
Female	47.55%	54.67%
White	80.50%	73.42%
Black	8.15%	11.52%
Other Race	11.35%	15.06%
Hispanic	8.82%	15.48%
Age	19.609	23.554
Currently or Previously Married Persons	4.57%	30.80%
Persons with Children	8.48%	26.31%
Independent	13.36%	41.07%
Dep. & Parent's Income < $40K	53.77%	38.61%
Dep. & Parent's Income > $40K	32,86%	20.33%
Parents Dropped Out of High School	4.34%	10.33%
Parent Completed High School	60.44%	57.12%
Parent Completed College or More	32.49%	24.74%
Parents Education Missing	2.72%	7.80%

Data are from the 1996/2001 BPS. Restricted to academic degree-seeking students beginning at a two-year institution in the 1995-96 academic year.
a: Attendance noted in the Spring 2001 term.

Table 3
Institution-Specific Information
by Type of School First Attended & Type of Population

	Four-Year Institutions				Two-Year Institutions			
	All Institutions (1)	Homogeneous Institutions Reported Only (2)	Homogeneous Institutions Unreported Only (3)	Heterogenous Institutions (4)	All Institutions (5)	Homogeneous Institutions Reported Only (6)	Homogeneous Institutions Unreported Only (7)	Heterogenous Institutions (8)
Total # of Institutions	456	189	13	254	172	10	29	133
% of Total # of Institutions	100.0%	41.4%	2.9%	55.7%	100.0%	5.8%	16.9%	77.3%
Average # of Students/Institution	13.8	11.4	2.0	16.2	5.9	3.3	2.4	6.8
Average Weighted # of Students/Institution	4033.4	3451.9	659.8	4360.3	8632.0	15137.1	5025.1	8677.6
Weighted % of Students who are Reported	87.7%	100.0%	0.0%	81.8%	46.6%	100.0%	0.0%	48.3%
3 Year Progress Measures: (a)								
AA Degree					16.9%	23.3%	2.6%	17.8%
AA degree or enrolled in 4-year Institution					33.6%	46.7%	22.7%	33.9%
No degree & not attending Fall 1998+					38.4%	31.7%	44.5%	38.1%
6 Year Progress Measures: (b)								
BA Degree	62.2%	74.4%	23.7%	56.1%	13.6%	34.0%	6.8%	13.4%
AA Degree (no BA), still attending					6.3%	3.0%	5.8%	6.4%
AA Degree (no BA), not still attending					12.1%	5.5%	5.6%	12.9%
No Degree & Still Attending	13.1%	8.5%	14.8%	15.5%	16.6%	13.4%	18.8%	16.5%
No Degree & Not Attending	24.7%	17.1%	61.5%	28.5%	51.5%	44.1%	63.1%	50.8%

(a) The 3 year progress measures are not all inclusive and hence do not sum to one.
(b) AA degrees are not measured for those initially attending four-year institutions
Data are from the 1996/2001 BPS. Restricted to academic degree-seeking students beginning in the 1995-96 academic year.
Institution-specific progress measures are based on weighted individual outcomes.
Institutions are weighted based on the number of students in the sample so that those with more sample observations receive a higher weight.

Table 4
Progress within Heterogeneous Institutions
by Type of School First Attended & Type of Population

	Four-Year Institutions	
	Population Type	
6 Year Progress Measures:	Reported	Unreported
BA Degree	60.9%	32.3%
No Degree & Still Attending	13.7%	25.5%
No Degree & Not Attending	25.4%	42.2%
Intra-Institution Correlations Between 6 Year Progress Measures:	Correlation	P-Value
Reported and Unreported BA Receipt	0.310	0.000
Reported and Unreported Non Attendance	0.249	0.000
Reported BA Receipt and Non Attendance	-0.818	0.000
Unreported BA Receipt and Non Attendance	-0.599	0.000

	Two-Year Institutions	
	Population Type	
3 Year Progress Measures:	Reported	Unreported
AA degree or enrolled in 4-year Institution	49.5%	18.2%
Not attending after Spring 1998	34.3%	44.3%
Intra-Institution Correlations Between 3 Year Progress Measures:	Correlation	P-Value
Reported and Unreported AA Receipt or in 4-year Inst.	0.150	0.085
Reported and Unreported Non Attendance after Spring 1998	0.164	0.059
Reported AA Receipt and Non Attendance after Spring 1998	-0.416	0.000
Unreported AA Receipt and Non Attendance after Spring 1998	-0.319	0.000
6 Year Progress Measures:		
BA Degree	21.1%	6.8%
AA Degree (no BA), still attending	7.0%	4.3%
AA Degree (no BA), not still attending	14.8%	9.4%
No Degree & Still Attending	14.4%	20.9%
No Degree & Not Attending	42.7%	58.5%
Intra-Institution Correlations Between 6 Year Progress Measures:		
Reported and Unreported BA Receipt	-0.013	0.882
Reported and Unreported Non Attendance/No Degree	0.120	0.170
Reported and Unreported Any Degree Receipt	0.064	0.464
Reported BA Receipt and Non Attendance/No Degree	-0.524	0.000
Unreported BA Receipt and Non Attendance/No Degree	-0.369	0.000

Data are from the 1996/2001 BPS. Restricted to academic degree-seeking students beginning in the 1995-96 academic year at an institution with both reported and unreported populations in the sample.
Institution-specific progress measures are based on weighted individual outcomes.
Institutions are weighted based on the number of students in the sample so that those with more sample observations (and hence likely more accurately represented) receive a higher weight.