Improving the U.S. Department of Education's Performance Data by Accreditor Dataset:

A Synopsis of Two ACICS White Papers

Thomas H. Wickenden, Ph.D.[1]

The U.S. Department of Education (ED) has established, by executive action of the Secretary of Education, and has published on its website an on-line information resource that attempts to relate the performance of institutions to their source of accreditation. This information is contained in a dataset accessed through the Department's revised website page for Accreditation (http://www.ed.gov/accreditation) and is titled "Performance Data by Accreditor." The dataset is part of ED's Transparency Agenda for the effectiveness of post-secondary education institutions and programs.

In addition to publishing data derived exclusively from institutional and student-level metrics, ED suggests rankings for accrediting agencies by summarizing the number of institutions for each accreditor in the top, middle and bottom third, nationally, on selected indices of student graduation, earnings of graduates, and repayment of student debt. Moreover, ED is making this and other information available to the Office of Postsecondary Education (OPE) and to the National Advisory Committee on Institutional Quality and Integrity (NACIQI) for use in their reviews of accreditors. Finally, ED seeks to "encourage accreditors, within the scope of its current authority, to apply outcomes-directed measures in accreditation and monitoring of institutions that have weak outcomes," presumably referring to the outcomes included in this dataset (Fact Sheet – Department of Education Advances Transparency Agenda for Accreditation (November 2015), http://www.ed.gov/acreditation).

In order to assess the reliability of this dataset and the relevance of the conceptual models of higher education and accreditation upon which it is based, the Accrediting Council for Independent Colleges and Schools (ACICS) commissioned original research. The resulting research reports analyze the dataset of ED's on-line resource and its validity for use by prospective students and policymakers in evaluating institutions by source of accreditation. One research paper by Bob Cohen (Cohen, May 2016) takes a qualitative approach, comparing this new ED dataset to the accreditation process and metrics currently utilized by ACICS. The other paper, by Nam D. Pham and Mary Donovan of NDP Analytics (Pham and Donovan, May 2016) takes a quantitative approach, analyzing the ED's metrics, proxies and approach to aggregation compared to the research literature on higher education outcomes.

This synopsis highlights, integrates and illustrates the findings and recommendations of the two research reports, which are attached to this synopsis.

I. Findings

The ACICS Accreditation Process - As described in the paper by Cohen on "Measuring Accreditation Effectiveness and Educational Quality" (referred to in this synopsis as "Measuring Accreditation"), ACICS is an accreditor of private and for-profit career colleges with a long history of effective service to the community of career education institutions, to their students and the employers of their students and since 1955, to the U.S. Department of Education as a recognized authority on the quality of career education.

1. Based upon its extensive experience with a large number of institutions and with guidance from both ED and the Council of Higher Education Accreditors (CHEA), ACICS utilizes a well-established, time-tested, multidimensional hands-on, on-site as well as metric-based accreditation process that complies with or exceeds ED and CHEA standards. The ACICS method for assuring institutional quality is based on direct, first-hand observation by academic experts, on-going data review, conformance to standards and a commitment to continuous quality improvement. In addition to the performance insights that can be gleaned through on-site evaluation and extensive data analysis, ACICS requires its member institutions to meet or exceed a series of outcome metrics, selected for their relevance to career education and the common desire of career college students to persevere, to acquire marketable, in-demand skills, and to attain gainful and personally fulfilling employment. (See Measuring Accreditation, Section II.)

2. This extensive and comprehensive process appears to be effective, as demonstrated by its longevity, positive impact upon the quality of accredited institutions, the significant contribution of the institutions ACICS accredits to the education of the nation's workforce, and as verified by the various metrics of student academic and economic success used in this accreditation process. For example, in 2014, ACICS accredited 831 institutions, which enrolled 647,041 students. A total of 147, 568 students graduated from a program at those institutions in that year. The following standards and metrics were used by ACICS to drive performance of accredited institutions and track the effectiveness of its accreditation process:

   Retention - The Council's standard for retention was 60% and on average, 73% (with a standard deviation of 10 percentage points) of the students were retained.

   Job Placement - The ACICS standard for job placement was also 60%, and on average, of those eligible for employment, 74% (with a standard deviation of 12 percentage points) were placed in employment related to their field of study.

   Student Loan Default – The ACICS threshold for warning institutions about their student cohort default rate is 25%, and the three-year cohort-default rate for ACICS accredited schools is 19% (with a standard deviation of 7.9 percentage points). This outcome is well below the 30 percent threshold set by ED for regulatory sanction. In addition, only 11 (1.5%) of the 725 institutions listed in the ED Dataset were over that 30% threshold. (See Measuring Accreditation, Section III, ACICS, *Key Operating Statistics*, 2014, and Performance Data by Accreditor, http://www.ed.gov/accreditation.)

3. While ACICS can always improve and is committed to the principle of continuous improvement, the apparent discrepancy between the effectiveness of this accreditor and the performance suggested by the dataset, indicates that the dataset may not be a valid instrument to assess an accreditor whose institutions have a mission and an enrollment that is distinctly different from that of the more traditional institutions for whom the metrics in ED's data collection and analytical instruments were developed. For example, the majority of institutions accredited by ACICS offer 2-year and non-degree occupational and technical programs whose graduates would not be expected to earn as much as those graduating from 4-year programs and therefore not to have salaries and payback rates comparable to the averages for traditional institutions.) (See Measuring Accreditation, Section IV and ACICS, *Key Operating Statistics*, 2014.)

<u>The ED Performance Data by Accreditor Dataset</u> – As described in the paper by Pham and Donovan on "The Limitations and Shortcomings of ED College Scorecard and Performance Datasets" (referred to in

this synopsis as "Performance Dataset"), an examination of the Performance Data By Accreditor dataset reveals a number of significant weaknesses that most likely explain the difference between the level of performance described by ACICS' metrics and that suggested by the ED dataset.

1. The ED database suffers from a simplistic conceptual model that ignores the complexity of the process that has been extensively documented in research literature. The matrix of inputs and outcomes is simply too narrowly defined to be useful in analyzing the performance of education institutions as diverse as those in the U.S. (See Performance Dataset, Section 1. Also see the IHEP publication, *Toward Convergence: A Technical Guide for the Postsecondary Metrics Framework*, which makes a similar point based upon over a decade of pilot programs and studies.)

2. The ED database suffers from the selection and use of proxies that are biased, inconsistent and incomplete. It is biased because it only applies to a specific set of students and not to others. Large groups of students are not represented in the dataset due to the selection of proxies. In a number of cases, the selected indicators are derived using only a subset demographic of the student population in an institution and therefore are not representative of larger groups of students. Furthermore, several selected indicators contain only partial information and fail to provide a complete analysis. More importantly, ED includes only college costs, completion rates and labor market outcomes to measure the value of education. However, the inputs and outcomes of postsecondary education in the U.S. are much more complex. Student inputs such as demographics, academic preparation and performance, and career aspirations, as well as institutional inputs such as mission, programs, selectivity of admissions, infrastructure and resources) are known to have significant impacts on student outcomes. Analysis of the dataset will yield inconsistent results due to the use of arbitrary criteria with varying correlations to the actions taken by accreditors. Finally, because the dataset is incomplete, analysis of the data it contains will produce inaccurate results (See Performance Dataset, Section 2.)

3. The Department takes its data from that which are currently available on College Scoreboard (https://collegescoreboard.ed.gov/data/documentation). The College Scoreboard is intended to help prospective students, their families and guidance counselors make better informed college cost and value decisions, not to draw judgements about the quality of school programs or the effectiveness of the associated accrediting agency. There is nothing in either statute or regulation which identifies these as indicators of quality or prescribes their application by accrediting agencies in evaluating institutional quality and integrity (See Measuring Accreditation, Section IV.)

4. Furthermore, the shortcomings due to the data limitations become more severe when ED aggregates the indicators by accreditor. The ED indicators fail to capture the quality of education of different types of institutions that are created to serve different types of students who have different education objectives. These factors are essential to consider when measuring the quality of education; holding the factors constant to compare across institutions or accreditors is misleading and results in erroneous conclusions about institutional effectiveness and accreditor performance. No attempt or recommendation is made to filter or control for these factors. Therefore the dataset is, at best, not informative about the true impact of accreditation upon

the quality of education or its economic outcomes. At worst, it facilitates uninformed analysis by the media and policymakers, leading to spurious and harmful conclusions. By expanding the dataset to include other relevant factors, by contextualizing the dataset variables through appropriate filters, or by selecting a different set of input and outcome variables such as those utilized by ACICS or other national accreditors, the ranking of accreditors would clearly be very different. (See Performance Dataset, Section 3.)

5. Overall, the conceptual framework is too simplistic to be used for the purpose of assessing a multidimensional postsecondary student body. The aggregated indicators that are used as proxies for the input and outcome elements are faulty and produce misleading results of the quality of education and the performance of educational institutions and their accreditors. Additional work is needed to improve the conceptual model of the quality of education as well as the data of the proxies used to measure the quality of education. In summary, at their current state of development, the ED College Scorecard and Performance Data by Accreditor datasets are simply not sufficient to provide unbiased, consistent and complete information, appropriately aggregated for use by prospective students, families and policymakers. (See Performance Datasets, Section 4.)

II. Recommendations

ACICS is committed to continuous process improvement and acknowledges common ground with ED regarding improving access to valid and reliable information for prospective students to use in pursuing education beyond high school; and for accreditors and policymakers to use in the continuous improvement of education quality. In that spirit, the agency offers the following general and specific suggestions:

Development and Selection of Metrics – ED should utilize more comprehensive academic and economic outcome measures that track the chances of success for **all** students, including those that are underserved and often underrepresented or simply missing in traditional data metrics and proxies. (See Performance Datasets, Section 5, Conclusions.)

1. An example is the traditional graduation rate, which does not include part-time students, students who transfer between institutions, students who stop out for a term or two, students who change programs, students who do not seek a degree or who, for some reason, take more than 150% of the normal time to complete a program. There are several approaches suggested in the research literature, some of which have been explored by accreditors, which might be taken to developing a more comprehensive graduation rate measure.
2. Another addition that would be useful is to include program-level enrollment since many institutions accredited by some accreditors have large shares of students enrolled in multiple program levels. For instance, a school classified as predominately bachelor's degree-seeking could actually award 40 percent of it students bachelor's degrees, 30 percent associate degrees, and 30 percent certificates. As a result, the predominant degree assigned to school may not be representative of the full student body.
3. It would also be important to include and integrate metrics currently collected and analyzed by various accreditors, which align with ED and CHEA standards; these metrics are required and drive performance evaluation at the institutions they accredit.

Data Definition - Common definitions of key inputs and outcomes would be most helpful, as noted in the Secretary of Education's goal to "establish a set of standardized, common definitions and data reporting" (Fact Sheet – Department of Education Advances Transparency Agenda for Accreditation (November 2015), www.ed.gov/acreditation).

1. An example might be the definition of job placement or employment, for which every state agency, every accreditor and the Department appear to have a different definition. In addition definitions change over time in response to experience and to changes in related policies. This has been the cause of great confusion over the validity of data reported by different career education institutions. The use of federal employment data is potentially a useful addition to data on economic outcomes of higher education, as long as the definition and limitations of this data and its untested correlation with the student's field of study are understood and taken into account.

Data Aggregation –The applicability and usefulness of the dataset would be improved by aggregating data through the use of analytical techniques that take into account key contextual factors. (See Performance Datasets, Section 5, Conclusions, and Measuring Accreditation, Section IV.)

1. One example is the use of filtering to ensure that comparisons are being made between institutions with similar missions, admission policies, student demographics, academic programs, and accreditation.
2. Multi-variate analysis is a different way of looking at variables of interest in the context of other key factors to determine how much weight to give to the independent and mediating variables, such as accreditation. This technique is well-known and widely used.
3. Another example is the use of risk-adjusted analysis to look at variables of interest in the context of what would be the expected outcome for similar students. Accreditors could be sorted into those within a standard deviation or so of the mean, compared to those above that standard and those below that standard. This technique has been effectively applied to graduation rates by some non-governmental organizations such as The Education Trust.
4. A fourth example would be the use of value-added analysis to determine how much incremental quality is added to educational outcomes by accreditation. This technique would obviously be very useful in evaluating accreditors but would likely be difficult to accomplish since it requires the comparison of institutions that are nearly identical in terms of all key variables, but differ in terms of accreditation, including groups of similar institutions that have no accreditation.

Financial Analysis – A more rigorous analysis of the financial stability of institutions and their parent corporations would serve to ensure that large corporations do not experience sudden insolvency about which their accreditors and the Department are unaware, as appears to be the case with Corinthian Colleges, Inc., an organization whose failure is specifically cited by ED in calling for a legislative reform proposal regarding financial standards for accreditation (Fact Sheet – Department Advances Transparency Agenda for Accreditation, www.ed.gov/accreditation). This approach would enable those with fiduciary responsibility for the distribution of taxpayer resources to identify institutions that are manifesting financial risk and to require that they maintain adequate reserves. Therefore, this approach would appear to be more effective than requiring teach-out plans or imposing greater reserve requirements upon those institutions serving students who are already underserved and whose individual academic and economic success is at risk. (See Measuring Accreditation, Section 3.)

1. An example might be the financial ratios and indices that are utilized by both the Department and accreditors. When applied to audit reports on the previous year's data, these measures are somewhat useful. However, none is designed to test the ability of a tuition-dependent institution to withstand a significant drop in enrollment, which can occur well after the submission and analysis of annual audit reports. Belated action by ED to restrict cash flow through heightened monitoring, etc., can serve to push an institution over the financial cliff, putting the education of students at risk, when the intention is just the opposite.
2. A second issue is the level at which financial review occurs. When the department or accreditors focus on a campus or system of campuses, the analysis may obscure weaknesses (or strengths) at the highest corporate level. Although education is provided to students and should be evaluated at the individual campus level, it would be helpful if the Department, working with accreditors, could develop a more comprehensive approach that would recognize the role of parent and subsidiary corporations in the financing of educational brands, systems, and individual campuses.

Policy Coordination – Policy initiatives and data metrics would be improved through better coordination of changes in requirements, regulations and criteria between ED and accreditors, such as was mentioned as one of the Secretary's executive actions included as part of ED's Transparency Agenda (Fact Sheet – Department of Education Advances Transparency Agenda for Accreditation (November 2015), www.ed.gov/accreditation). (See Measuring Accreditation, Section 1.)

1. As an example, the requirement that career education institutions publish job placement data without verification by the institution, its parent corporation or its accreditor has created a situation where verification efforts, which take some time to develop, have been lagging the publication of data. In addition, the publication effort might have included discussion and definition of the material components of an acceptable verification effort: e.g., level of verification (percent of placements verified), the use of sampling; statistical validity; standardized disclosures of placement performance; required disclaimers regarding the limitations of the data, etc.)
2. The design and contents of ED's accreditor performance dataset would have benefitted from the addition of input from the array of stakeholders and data consumers prior to publication.
3. Finally, accreditation in general would benefit from an effort to create greater consensus in the policy community regarding the validity of accreditation-based review of institutional performance. This could include an evaluation of the various components of the accreditation process, including observations, interviews, surveys, file reviews by peer evaluators on site, on ground inspection, etc., as well as the best practice in balancing these with data-based metrics derived primarily from self-reported and minimally verified data submitted annually or between full accreditation reviews.

ACICS hopes that the publication and distribution of the research findings described in this synopsis will help to identify limitations and weaknesses in ED's Performance by Accreditor dataset, warn those using the new dataset that it can lead to erroneous conclusions compared to other well-established and more theoretically grounded metrics and techniques for evaluation of institutions and their accreditors. ACICS also seeks to join ED in its Transparency Agency by offering recommendations for improving the dataset and for working together to achieve the common goal

of high quality education in the United States at the post-secondary level and a well-educated workforce for the 21st century.

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Measuring Accreditation Effectiveness and Education Quality

I. Introduction

In the public discourse about the appropriate role of higher education in the U.S., the relevance of institutional mission is often overlooked. Yet it is mission which defines the purpose of the institution, purposes can vary widely, and the same results for different institutions with different missions does not necessarily mean their effectiveness is comparable. Institutional and program-level effectiveness must be measured in the context of missions and purpose.

Unfortunately, from the perspective of higher education policy formulation, the temptation for many observers is to lump postsecondary institutions together and to assess their performance with the same yardstick. This situation persists notwithstanding the fact that a college or university serving students with highly competitive academic abilities and coming from affluent backgrounds will have a very different mission and purpose than other types of institutions, including those schools offering career-focused education to students with limited academic achievements and modest financial means.

Mission yields purpose, and purpose yields approach. Whether a given academic approach produces a higher education with the requisite quality and integrity is a question that only can be answered in the context of the institution itself, not with gross approximations or one-size-fits-all proxy measures.

Since the waning days of the 19th century, accreditation has been considered the best arbiter of institutional quality and integrity. Accreditation takes into account institutional mission and purpose and, with a variety of direct and in-direct assessments made by credentialed postsecondary education experts, renders judgement on the fitness of an institution and the ability of its programs to meet or exceed a recognized, widely shared standard.

Like any peer reviewed action, accreditation is designed to not only filter out bad actors but to offer institutions a path for continuous process improvement. In this way, accreditation serves its numerous stakeholders with a greater good, not only assuring institutional compliance with a minimum set of acceptable standards but also informing and encouraging candidates for accreditation along the way to adopt best practices.

Since 1952, the U.S. government has also used accrediting agencies as gatekeepers regarding the fitness of colleges and universities to participate in federal student aid programs. By doing so, lawmakers and agency officials wisely recognized that:

- The U.S. system of Independent higher education leads the world;
- A move by government to assess the caliber of higher education could easily become politicized and thereby pose a threat to academic freedom;
- The conduct of postsecondary oversight was best left to postsecondary education experts, not government bureaucrats.

While this system of institutional oversight and accountability has worked well for almost 70 years, it has not been a perfect solution. Various episodes of waste, fraud and abuse in Title IV student aid

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programs have caused a small but vocal group of critics to charge that the entire federal student aid apparatus is broken.

The failure of accrediting agencies to act as investigators rather than quality and integrity assessors has spawned various proposals for change. This chorus of criticism has no doubt led to recent efforts by the U.S. Department of Education to establish a "Transparency Agenda" for accreditation. On this agenda is an initiative to correlate student and institutional performance outcomes with the accrediting agencies involved.

This paper considers, in part, whether the Department's effort in this regard adds to or detracts from a clear understanding of accreditation and its role in assuring institutional quality and integrity.

If nothing else, promulgating such a series of actions by executive order is irregular. First, the accrediting agencies' Title IV gatekeeper role is established in statute. With each reauthorization of the Higher Education Act, Congress, not the Executive Branch, sets the list of factors for assessing the recognition worthiness of accrediting agencies. With its Transparency Agenda, the Department brings its own advocacy voice to this legislative process, using outcomes measures from largely dissimilar institutions and students to attempt to establish a new level of across-the-board accreditor accountability.

Secondly, while the Department has selected its list of outcome measures, there is nothing in either statute or regulation which identifies these as indicators of quality or stipulates their use by accrediting agencies. Rather, the Department takes its data from that which are currently available on College Scoreboard (https://collegescoreboard.ed.gov/data/documentation). College Scoreboard is intended to help prospective students, their families and guidance counselors make better informed college cost and value decisions, not to draw judgements about the quality of school programs or the effectiveness of the associated accrediting agency.

Third, in its quest for greater transparency, the Department mixes apples and oranges by comparing institutions of dissimilar missions and purposes. Moreover, it both challenges apples for not being more like oranges and encourages others in Congress and the National Advisory Council on Institutional Quality and Integrity (NACIQI) to do likewise.

Fourth, the Transparency Agenda is the product of the Department's Policy & Planning Division, not the Accreditation & State Liaison Division. The latter is responsible for the recognition of accrediting agencies and would be the logical home for questions concerning the effectiveness of accreditation or accrediting bodies. Instead, the Policy & Planning Division has taken the lead on developing the Transparency Agenda, apparently with no consultation or input from the accreditation community.

This white paper argues that the accreditation process as currently practiced by the Accrediting Council for Independent Colleges and Schools (ACICS) is based on sound theory and long experience for assuring the quality and integrity of postsecondary education programs and institutions. A brief history of ACICS and the process it follows in assuring the institutional quality and integrity of its members will be explained. The performance measures ACICS uses to evaluate the strengths and weaknesses of its member institutions will also be discussed. The paper concludes with a brief series of recommendations for fortifying the existing ACICS approach and better assuring conformance to its standards.

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II. Background and Theory of ACICS in Assuring Education Quality

A Brief History

The history of ACICS dates to 1912, when a group of executives gathered to form its predecessor organization, the National Association of Accredited Commercial Schools (NAACS). In doing so, they began the process of creating standards for private commercial schools. Their early activities included developing curricula and assuring compliance oversight with the organization's code of ethics. The NAACS code, in existence by 1914 and compulsory by 1920, required members to employ adequate numbers of competent instructors, suitable facilities and equipment, deal with students honorably, avoid advertising misrepresentations or misleading statements, cultivate the highest possible moral standards, avoid employment guarantees to students, report violations of ethical conduct, and submit disagreements to arbitration.

NACCS published its first list of accredited members in 1923 and, a few years later, not only began a process of institutional quality assurance by way of peer review but also focused on standards in such critical areas as teaching qualifications, course length and graduation requirements.

Several factors swelled the ranks of business and trade schools during the 20th century, including the migration of workers from farms to cities, the entry of women into the workforce, the demands created by World War II for those with clerical skills, the need to equip returning veterans with suitable occupational skills, and the advent of automation and its proliferation in the nation's businesses. The growth of proprietary education not only meant significant expansion in the number of schools serving this population but also an increase in competition among accreditors. Numerous mergers among these groups, including NACCS, took place between 1931 and the formation of ACICS in 1992.

The federal government recognized ACICS (then the Accrediting Commission for Business Schools) in 1956. Its name notwithstanding, the organization has been re-recognized every five years since then.

Present Day Accreditation Process

Today, ACICS brings rigorous scrutiny to the institutional oversight of its member schools. The organization's mission is to advance educational excellence at independent, nonpublic career schools, colleges, and organizations in the United States and abroad. This mission is achieved through a deliberate and thorough accreditation process of quality assurance and enhancement as well as ethical business and educational practices.

As with other professions like engineering, law and medicine, the education professionals who compose the ACICS membership firmly believe that no group is better positioned to judge the career education sector than the sector itself. ACICS accreditation is first and foremost a member-driven activity: peers reviewing the performance and outcomes of peers. The ACICS Board includes, by mandate and by intention, a significant number of public representatives who are knowledgeable of higher education but independent of the career education sector. These independent members ensure that the interests of the "public," e.g., tax payers other educational sectors, students, parents, policymakers, etc. are also well-represented.

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A Board of Directors manages and directs the business and financial affairs of ACICS, overseeing the work of the professional and administrative staff, while the Accreditation Council is responsible for accreditation standards, makes accreditation determinations and takes associated actions. The Board and Accreditation Council are composed of 15 members, including three public members. The Executive Director is an *ex officio* member. Members of the Board and Council can be either elected or appointed. A set of policies, procedures and standards guide ACICS accreditation. These are captured in the ACICS Accreditation Criteria. Institutions able to demonstrate that they are in compliance with the criteria are considered worthy of accreditation.

Institutions applying for ACICS accreditation must be licensed by the appropriate state education agency and have offered educational services to the general public for at least two years. In an initial application, institutions seeking ACICS certification are screened to assure that they meet basic eligibility requirements. Those deemed eligible may file a formal application for accreditation.

Major components of the accreditation process are an audited financial statement of the applicant's most recent fiscal year; an initial resource visit to the school to determine its readiness for evaluation; a self-evaluation of programs and operations performed by the applicant institution's administrators, faculty and staff; and an evaluation visit conducted by ACICS evaluators.

Self-evaluation by institutions and evaluation team visits by peer evaluators form the nucleus of ACICS accreditation. Self-evaluation is a lengthy, time-consuming and, as a result, costly process. Drawing on expertise from across the organization, a self-evaluation involves a comprehensive examination of an institution's mission, organization, administration, relations with students, educational activities, educational facilities, publications and other resources.

During school visits, ACICS evaluators verify the information in the institution's self-evaluation and gather other observable facts that relate to mission accomplishment and compliance with ACICS criteria. Evaluator reports are prepared and submitted to the candidate school for response. Team reports and school responses are then submitted to ACICS for final consideration and disposal, first by an Intermediate Review Committee and then by the Council itself. If accreditation is granted, institutions must continue to keep ACICS fully informed through annual reporting on institutional performance, financial health, student achievement and related factors.

In addition to granting accreditation, the Council can take several other actions based on its review of an applicant. A deferral of accreditation is made when an institution is considered to be only marginally compliant or when there is information insufficient to base a decision. ACICS explains its rationale for deferring the accreditation to the applicant, and provides a specific date for taking corrective action. A denial of accreditation withholds ACICS approval, either of the entire institution or branch or of a specific substantive change at the previously accredited institution. A withdrawal of accreditation removes a current grant of accreditation prior to its expiration. An Independent Review Board has the authority to reverse Council accreditation decisions.

A Multidimensional Approach to Quality

Quality as popularly considered can be a highly subjective, impressionistic, "I know it when I see it" concept. This is not the case with ACICS criteria for accreditation. Rather, the accrediting agency's criteria reflect a strong practical basis that is relatable to the ideas of such quality experts as Philip B.

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Crosby and W. Edward Deming. Crosby, for instance, has advanced such quality principles as conformance to requirements and zero defects. Deming concentrated his philosophy of quality into 14 points, including constancy of organizational purpose and continual product and service improvement.[1]

Linda Baer identifies a multidimensional model for assessing postsecondary education quality:

- Quality as exceptional (e.g. high standards)
- Quality as consistency (e.g. zero defects)
- Quality as fitness for purpose (fitting customer expectations)
- Quality as value for money (efficiency and effectiveness) and
- Quality as transformative (an ongoing process that incudes empowerment and enhancement of customer satisfaction)[2]

ACICS accreditation criteria fit comfortably within this schema, assuring the assessment of quality from multiple perspectives and meeting the needs of multiple stakeholders.

In terms of high standards, ACICS criteria require institutions to be licensed in the states in which they operate and to offer educational programs that are both defined and, in terms of their effectiveness, measurable. The accrediting process itself is non-trivial; rather, it takes place in a series of distinct phases, requiring a substantial commitment of time, effort and resources on the part of the institutions seeking accreditation.

In terms of consistency, the ability of an institution to meet ACICS standards is understood to be conditional, with grants of accreditation lasting no more than six years. ACICS withholds accreditation to institutions no longer meeting its high standards. Consistency is also exemplified by the review process itself, which combines both institution self-study and verification through direct observation and interviews with faculty, students and staff. Institutions receiving grants of accreditation must apprise ACICS of substantive changes by filing Annual Accountability Reports. Substantive changes include changes to mission, ownership, programs and campus closings.

In terms of fitness for purpose and meeting customer expectations, ACICS criteria include numerous examples. These include monitoring the financial condition of its accredited institutions through an Annual Financial Report, audited financial statements, financial ratio analysis and other relevant information. Doing so helps assure students and other stakeholders of the on-going viability of the institution and its ability to conduct skill focused programs. ACICS requires each of its accredited institutions to maintain a Campus Effectiveness Plan identifying how it assesses and continuously improves its educational processes and programs. The CEP must also address the institution's ability to meet the educational and occupational objectives of its programs. Separate processes help assurance congruence with customer expectations, including a formal mechanism for responding to student complaints and other adverse information. While assuring the due process rights of institutions, ACICS gathers data and follows a series of specific steps in search of satisfactory remedies, including steps which sanction schools and, potentially, retract grants of accreditation.

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[1] Chandrupatla, Tirupathi R., "Quality and Reliability in Engineering," Cambridge University Press, http://assets.cambridge.org/97805215/15221/excerpt/9780521515221_excerpt.pdf

[2] Baer, Linda, "Quality, Accountability and Action," ACICS White Paper

In terms of value, efficiency and effectiveness, the ACICS accreditation process includes several checks and safeguards. The Student Achievement Review (SAR) required of institutions is a notable example. The SAR allows ACICS to monitor institutional value delivery at both the program and campus level. Performance measures include retention, job placement, and licensure pass rates. A series of remedial steps are applied to institutions not in compliance with ACICS standards.

In terms of transformative capability, ACICS criteria regarding program planning and development assure innovation, inclusion and relevance. The criteria require that program design and policy formulation involves students, graduates, administrators, faculty and other interested parties. Likewise, the criteria require that institutions adopt the flexibility in program administration and organization required to serve varying groups and situations and that community resources be used to assure program richness.

Through a process that incorporates high standards, consistency of program delivery, suitability for the purposes served, the maintenance of requisite value and the on-going ability to assess and assure customer satisfaction, ACICS has established an accreditation program—recognized by both ED and the Council for Higher Education Accreditation--which meets both widely accepted conceptual models of quality as well as the practical demands of today's postsecondary career education marketplace.

III. ACICS Accreditation Measures

Like other accrediting agencies, ACICS approaches its institutional effectiveness assessments by looking at both the inputs and outputs of an applicant school's educational process. Metrics influencing assessments of quality at traditional colleges and universities include factors such as size of endowment, number of applicants applying for admission and the number accepted for admission, average SAT scores and high school grade point averages, and the reputation of individual faculty members. These are simply irrelevant in the career college realm.

The typical career college student is an older, working adult not entering the institution directly following high school graduation. To impart employable career skills, faculty qualifications based on real world experience are more practical and arguably more useful to students than faculty member reputation. Likewise, setting a high bar to career colleges admissions through high school GPA, SAT scores, college rankings and other means would simply deny opportunity to those populations of students most in need and most likely to benefit.

ACICS input measures emphasize the practical and pragmatic aspects of an open admissions, career education focused environment, including:

- Provision of appropriate instructional facilities, equipment, resources and support proportionate to the size of the institution and the nature of the program;
- Provision of faculty academically and experientially prepared for the subject matter they teach along with credentials from accredited institutions verifying the same;
- Establishment of faculty development plans both for in-service and professional growth;
- Provision of adequate library and information services.

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ACICS measures a series of outputs as part of its student achievement review. These achievement measures include retention, placement (at both the campus and program levels) and licensure pass rates, if applicable. Student cohort default rates are also monitored and, if below a certain threshold, may be the cause for follow up action. ACICS accredited schools must maintain retention and graduate placement rates of 60 percent or higher. ACICS also reviews but does not require reporting on graduate and employer satisfaction.

While reviews of inputs and outcomes help frame a more complete understanding of institutional effectiveness, they are not measures of student learning and do not determine whether the institution effectively imparts education and learning to its students. The surest indicators of institutional quality and effectiveness should be sought not at the start and finish of a higher education, but at its center: with student learning itself.

Such a quest can be illusive. During the time that students are enrolled in a college or university, they may learn in ways which have little or nothing to do with the institution, its faculty or programs. Also, students coming from backgrounds more supportive of education, more affluent, more open to intellectual inquiry and more ready to learn are more likely to thrive in an academic environment—factors that are not tied to the school or its pedagogy. According to the Pell Institute, in 2013, individuals from the highest-income families were eight times more likely to obtain a baccalaureate degree by age 24 than individuals from low-income families. This gap between rich and poor attainment has actually widened since 1970.[3] Other external factors that may impact student learning include early childhood stress, minimal access to enriching educational resources, limited exposure to vocabulary.[4] The playing field for the assessment of college performance is anything but level.

Since 2006, the Council for Higher Education Accreditation (CHEA) has sought to help postsecondary institutions and other stakeholders share practices which appear to boost student learning and institutional effectiveness. The CHEA Award for Outstanding Institutional Practice in Student Learning Outcomes are judged on a series of criteria, including:

- Articulating expected outcomes for an institution, program or major;
- Providing evidence of success with regards to outcomes;
- Informing the public about outcomes expectations and success;
- Using outcomes for institutional improvement.

In looking for what works, CHEA naturally seeks approaches that can be replicated at other institutions. Award winning institutions have taken a variety of approaches, including the use of "learning contracts" to create a baseline on what is to be learned and how learning will be assessed; a "meta assessment" process which looks across academic programs to review and rate assessment effectiveness; creation of an annual Assurance of Learning Day for campus wide sharing of information and ideas; internal and external reviews to determine the appropriateness of current learning goals and outcomes. The awards program indicates that colleges and universities themselves view innovation and improvement in student learning outcomes are critical to overall assessments of institutional effectiveness. [5]

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[3] Indicators of Higher Education Equity in the United States, The Pell Institute, 2015 Revised Edition
[4] Trafton, Anne, MIT News, "Study Links Brain Anatomy, Academic Achievement, and Family Income," April 2015
[5] http://www.chea.org/chea%20award/CHEA_Awards_All.html

Overlaid on the institution's own efforts in assessing student learning is the activity of its accrediting agency. For ACICS, this process involves on-site inspection, document reviews, interviews and classroom observation. Evaluators look for evidence that an institution's educational programs are consistent with its mission and the needs of its students. Broad participation in the formulation of such programs is sought, including such stakeholders as students, graduates, administrators, faculty and other interested parties. Particularly relevant for a non-traditional student body, the inquiry seeks to assure that allowances are made for the different learning style of individual students.

If programs include externships, ACICS evaluators determine whether the institution operates with a written, mutually signed agreement with the externship site outlining learning objectives, course requirements and evaluation criteria.

IV. Conclusions and Recommendations

The ACICS method for assuring institutional quality is based on direct, first-hand observation by academic experts, on-going data review, conformance to standards and a commitment to continuous quality improvement. In addition to the performance insights that can be gleaned on-site evaluation and through extensive data analysis, ACICS requires its member institutions to meet or exceed a series of outcome metrics, selected for their relevance to career education and the common desire of career college students to persevere, to acquire marketable, in-demand skills, and to attain gainful and personally fulfilling employment.

This extensive and comprehensive process appears to be working well, as demonstrated not only by its longevity, by its positive impact upon the quality of accredited institutions, by the significant contribution of the institutions ACICS accredits to the education of the nation's workforce, but also as verified by the metrics of student academic and economic success used in this accreditation process. For example, in 2014, ACICS accredited 831 institutions, which enrolled 647,041 students. A total of 147, 568 students graduated from a program at those institutions in that year. The Council's standard for retention was 60% and on average, 73% (with a standard deviation of 10 percentage points) of the students were retained. The ACICS standard for job placement was also 60%, and on average, of those graduates eligible for employment, 74% (with a standard deviation of 12 percentage points) were place in a field related to their field of study. In addition, the three-year cohort-default rate for ACICS graduates with federal loans was well below the Department's first-level negative standard of 30%. (See Measuring Accreditation, Section III and ACICS, *Key Operating Statistics*, 2014.)

The ACICS approach to accreditation and the measurement of institutional performance is by no means perfect. Rather, it is a time tested, multi-dimensional, theory-based process that appears to be working well according to the current set of metrics.

Just as the focus of career education has shifted over the years, the criteria used to evaluate institutional performance have evolved, and the tools and methods of assessment have changed in the past and will continue to change in the future. ACICS remains committed to the improvement of processes by which its member institutions deliver education and by which accreditation itself is conferred on independent colleges and schools. ACICS seeks to work with stakeholders both within its

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own membership and in the wider postsecondary education community toward the identification, analysis, adaptation and testing of constructive ideas and concepts that help to achieve this purpose.

ACICS accreditation might be improved further by a series of steps taken in the short term to eliminate process shortcomings and strengthen oversight. These steps include:

- Increase the accreditor's role in assessing the underlying financial soundness of the institution, including the use of practical benchmarks, tests for the ability to withstand unforeseen downturns in tuition revenue, and other cash-flow metrics to signal heightened risk to operations, the need for corrective action and, failing adequate correction, the need for sanctions. Such an assessment could apply the type of "what-if" scenarios that better integrate the education enterprise with the business enterprise. Such assessments could also help the institution make better investments in its programs and infrastructure, leading to better outcomes for students, employers and taxpayers.
- Improve the coordination between accrediting bodies and ED regulators in the early stages of rule formulation. Numerous stakeholders contribute to the negotiated rulemaking process. Not all of these stakeholders, however, have the responsibility to oversee the effective implementation of new rules and regulations. Accreditors often operate around fixed schedules and lengthy timeframes. Early consults and better coordination between accreditors and ED could give the former the head start needed for putting in place the mechanisms to educate institutions and to determine their compliance with new rules. Failure to coordinate and align practices with regulatory requirements contributes to the production of "gotcha" headlines but does little to strengthen higher education.
- Adopt a comprehensive, commonly accepted definition of a "graduation" metric. The current ED definition of graduation is based on an out of date perception that students attend college immediately after high school, spend four or more years on a residential campus, and pursue their studies full time until graduation or drop out. This, of course, is not the case, although the retention of this view greatly advantages elite schools serving more affluent students. A comprehensive definition of graduation would account for the tens of thousands of students who begin college, drop out and return later in life; who transfer one or more times during a college career; who attend part-time; and who attend year round. All of these circumstances are commonly experienced by non-traditional students but ignored by ED statistics. A comprehensive, commonly shared graduation definition would obviate the need for career colleges to collect one set of statistics for their accreditor and a second, different and less illustrative set for the federal government.
- Create a common definition regarding placement would eliminate ambiguity regarding the interpretation of "in field" versus allied field placements, the length of employment required to qualify as placed, the acceptability of part-time versus full-time employment, the duration of unemployment before a student is considered not placed and related factors.
- Level the postsecondary education playing field by adopting risk adjusted metrics for assessing education quality school performance. Comparing institutions and, by extension, accreditors without the appropriate weighting factors for mission, purpose and constituency serves merely to belabor the obvious while undermining the pride and confidence of students in the education they have worked hard to achieve. ACICS stands ready to work with ED, the accreditation

community, and other stakeholders in the development of such commonly accepted and applied risk adjustment metrics for educational quality assessment.

Independent, peer level review and accreditation have served the postsecondary community well for over 100 years. It will continue to do so with appropriate adjustments to process and the spirit of common purpose and cooperation among its many stakeholders. In moving forward, however, care should be taken to avoid steps that impose change by fiat and become the source of multiple, unintended and costly consequences to college access, learning, student achievement and effective accountability overall. Care must also be taken to include the context of institutional mission and purpose in reforming the evaluation of accredited institutions.

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THE LIMITATIONS AND SHORTCOMINGS OF ED COLLEGE SCORECARD AND PERFORMANCE DATASETS

Nam D. Pham, Ph.D.

Mary Donovan

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THE LIMITATIONS AND SHORTCOMINGS OF ED COLLEGE SCORECARD AND PERFORMANCE DATASETS

Nam D. Pham, Ph. D. and Mary Donovan[1]

May 9, 2016

SUMMARY AND KEY FINDINGS

Over the past three years, the Department of Education (ED) has taken initiative to assimilate and to publish data of the performance of colleges and universities alongside their accreditors. ED has two main objectives: the first objective is to provide information for prospective students and their families to make smart decisions on schooling and the second objective is to advocate for accreditors to be accountable for the performance of educational institutions and student outcomes. In order to produce reliable information to inform the public, ED would have to overcome three main challenges: (1) to define a comprehensive matrix of inputs and outcomes of education to evaluate the quality of education; (2) to identify and construct unbiased, consistent, and complete proxies of the inputs and outcomes to quantify the quality of education; and, (3) to aggregate each individual indicator to the institution level to compare across educational institutions and accreditors.

Our analysis found that the ED College Scorecard and ED Performance Data by Accreditor datasets are limited and only applicable to a small subset of the postsecondary student population in the United States. The limitations and shortcomings of ED datasets are categorized in three areas:

1. The ED input and outcomes matrix for education quality is narrowly-defined. ED includes only college costs, completion rates, and labor market outcomes to measure the value of education. This matrix focuses solely on economic factors to define the quality of education. However, the inputs and outcomes of postsecondary education in the U.S. are much more complex. In addition to college costs, student inputs (e.g., academic performance, demographics, and career aspirations) and institutional inputs (e.g., infrastructure and resources) are shown to have significant impacts on student outcomes. Since noneconomic outcomes are equally important for postsecondary students, academic achievements and other direct measurements need to be included in the matrix to evaluate the values of education and contributions of the stakeholders.

2. The ED selected proxies for college costs, completion rates, and labor market outcomes are biased, inconsistent, and incomplete. In its Performance Data by Accreditor, ED selected five indicators to proxy for college costs, two indicators to proxy for completion rates, and two indicators to proxy for labor market outcomes. While postsecondary student profiles in the U.S. vary widely

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[1] Nam D. Pham is Managing Partner and Mary Donovan is Senior Associate at ndp | analytics. Julia Peters and Yuhan Wu provided analytical assistance. We would like to thank the Accrediting Council for Independent Colleges and Schools (ACICS) for their financial support to conduct this study. The opinions and views expressed in this report are solely those of the authors.

ED00000111

from their academic and economic backgrounds to their demographics, the proxies used in ED datasets are biased on specific subsets of the student body. Furthermore, ED proxies for quality of education do not provide complete information of costs and outcomes. With the combination of narrowly-defined input and outcome matrix and the limitations of proxies, ED datasets are not sufficient for measuring the educational quality of postsecondary institutions. Therefore, ED datasets do not provide meaningful information for well-diversified prospect students and their families to make the right choice of schooling.

3. The shortcomings of ED datasets are magnified when aggregating by a group of institutions or by an accreditor. National and regional accreditors have different educational institutions in their portfolios. While each accreditor's portfolio is unique, most educational institutions in the national accreditors' portfolios are less-than-4-year private for-profit institutions that typically serve non-traditional and disadvantaged students. In contrast, regional accreditors' portfolios concentrate on public and private nonprofit institutions that often serve traditional students. Since student background and demographics contribute significantly to students' academic performance and economic outcomes, the outcomes of students in the portfolios of national and regional accreditors are expected to be variant. Thus, the performance of accreditors has little to do and might even be irrelevant to the economic outcomes of students in their portfolios. It would be unjustifiable to reward one accreditor or to punish another based on the economic outcomes of the students in their portfolios.

At the current stage, ED College Scorecard and Performance Data by Accreditor datasets are not sufficient to provide unbiased, consistent, and complete information for prospect students, families, and policymakers. The datasets are also too simplistic to be used for the purpose of assessing the performance of educational institutions and accreditors. Additional work is needed to improve the conceptual model of the quality of education and to enhance the underlying data of the proxies used to measure the costs of education, completion rates, and labor market outcomes.

This report first discusses the conceptual framework of the ED input and outcomes matrix to assess the quality of education. Secondly, the report analyzes nine indicators that ED selected to be proxies for the inputs and outcomes of education, focusing on the limitations of the underlying data to construct the indicators. Thirdly, the report summarizes the shortcomings of the indicators to be used for comparing the performance of educational institutions and their accreditors.

SECTION 1: BACKGROUND OF ED COLLEGE SCORECARD AND PERFORMANCE DATA BY ACCREDITOR DATASETS

In February 2013, ED released its first interactive database, a subset of the larger College Scorecard dataset, to provide five key pieces of data about school costs, graduation rates, loan default rates, average amount borrowed, and employment for postsecondary institutions. ED then selected a set of indicators available in the College Scorecard as proxies to quantify inputs and outcomes to measure the quality of institutions across the United States. ED's objective in publishing educational costs and employment

earnings is to help students to choose a school that is well-suited to meet their needs, priced affordably, and is consistent with their educational and career goals.[2]

In an effort to increase transparency of the performance of all educational institutions in each accreditor's portfolio, ED, in November 2015, selected a subset of College Scorecard data to publish the performance data by accreditor. The performance dataset contains 14 student and institutional metrics that are categorized in five groups (compliance status, cost/debt/repayment, completion rates, earnings, and student status).[3] ED aggregates the performance of all educational institutions for each metric by accreditor. ED then compares the data across accreditors to evaluate the contributions of accreditors to the educational quality measuring by costs, completion rates, and outcomes.[4]

Even at surface level, the limitations and shortcomings of the data are apparent. ED published a list of "23 four-year schools with low costs that lead to high incomes" as stated by ED. Similarly, ED published a list of "30 four-year schools with high graduation rates and low costs." In order to rank economic inputs and outcomes of students in postsecondary institutions, ED used the average net price for the lowest income families (between $0-$30,000 income bracket) to calculate the college costs, 150% graduation rate of students who are first-time, full-time, and fall semester and graduated from the original institution, and the median earnings of all Title-IV-receiving students 10 years after entering the original institutions.

Based on the ED information, prospective students and families would perceive that Harvard University, Amherst College, and Stanford University are the top three choices that are most suitable for students to attend. The average net price for low-income students to attend the top three institutions ranges between $3,386 and $3,895 per year. More than 95.2% of students attending these three institutions graduated within six years from the time they entered the schools. The median earnings of these students after 10 years from the time they entered these three schools are between $56,800 and $87,200 per year. Thus, Harvard University would give students the highest rate of return compared to other schools. From the ED Performance Data by Accreditor, the second implication is the regional accreditors who accredited these low-cost education institutions perform better than other national and regional accreditors (Table 1).

Table 1. ED's List of 23 Four-Year Schools with Low Costs that Lead to High Incomes[5]

Institution	Average Net Price for Low-Income Students	Graduation Rate (150 Percent of Normal Time to Completion)	Median Earnings of Students 10 Years After Entering the School

[2] "Education Department Releases College Scorecard to Help Students Choose Best College for Them," February 13, 2013, Press Office, Archived Information. http://www.ed.gov/news/press-releases/education-department-releases-college-scorecard-help-students-choose-best-college-them

[3] 14 indicators are accreditation status, HCM 2, average annual net price for Title IV students, % of students borrowing Federal loans, median debt of students who graduated, three-year repayment rate, three-year cohort default rate, 150% graduation rate, 6-year Pell completion rate, median earnings 10 years after enrollment, % of students earning above average high school graduate 6 years after enrollment, % of part-time students, % of Pell recipients, and % of students age 25 or above; "Accreditation: Universities and Higher Education," U.S. Department of Education. http://www.ed.gov/accreditation

[4] Mitchell, Ted. "Strengthening Accreditation's Focus on Outcomes." Office of the Under Secretary, U.S. Department of Education. February 6, 2016.

[5]http://blog.ed.gov/2015/09/schools-with-high-graduation-rates-low-costs/

Harvard University	$3,386	97.2%	$87,200
Amherst College	$3,739	95.2%	$56,800
Stanford University	$3,895	95.5%	$80,900
Columbia University in the City of New York	$5,497	94.2%	$72,900
Haverford College	$5,648	93.3%	$55,600
Princeton University	$5,720	96.5%	$75,100
Brown University	$6,104	94.8%	$59,700
Duke University	$6,280	94.4%	$76,700
University of Pennsylvania	$6,614	95.8%	$78,200
Bowdoin College	$6,731	94.3%	$54,800
Massachusetts Institute of Technology	$6,733	92.9%	$91,600
University of Virginia-Main Campus	$7,007	93.2%	$58,600
Vanderbilt University	$7,147	92.4%	$60,900
University of Michigan-Ann Arbor	$7,156	90.3%	$57,900
Hamilton College	$7,245	91.8%	$57,300
Massachusetts Maritime Academy	$7,519	64.0%	$79,500
Yale University	$7,637	97.0%	$66,000
Dartmouth College	$7,648	95.3%	$67,100
Washington and Lee University	$7,663	90.1%	$77,600
Trinity College	$7,874	84.8%	$56,100
Georgia Institute of Technology-Main Campus	$7,875	80.7%	$74,000
Rice University	$7,960	91.8%	$59,900
Williams College	$8,202	95.9%	$58,100

The selected information presented on the ED website is unarguably biased, inconsistent, and incomplete for students and their families. Consequently, the information misleads prospect students and their families. ED narrowly defines the input and outcome matrix as education costs, graduation rates, and earnings to assess the quality of education. In addition to a simplistic view, the selected indicators are not reliable proxies to represent educational costs for students who attend these schools. For example, the costs for a typical student to attend Harvard University are substantially higher $3,386 per year. The average net price for Title IV students (tuition, books, and living expenses minus grants and scholarships) is $14,049 per academic year and the average cost of attendance is $57,950 per academic year. While ED uses the average costs for lowest-income students, only 10% of Harvard students received Pell grants (a federal grant for undergraduate students with financial needs) and less than 3% of all undergraduate students received federal student loans.

Furthermore, not any prospective student can attend Harvard University. The admission rate to Harvard University is less 6% compared to 74% of all public schools and 68% of all private nonprofit schools. The average SAT score of student admitted to Harvard University is 1501 compared to 1031 for all public schools and 1070 for all private nonprofit schools. Meanwhile, most private for-profit institutions have open enrollment policies which allow all students to enroll regardless of prior academic performance or background.

Lastly, less than 24% of Harvard students are first generation students compared to 50% of students attending public and private schools. Studies have shown preexisting student background, both academic and non-academic, have significant impacts on student performance in college and post-college

employment opportunities.[6] New England Association of Schools and Colleges who accredited Harvard University seems to have little impact on the labor employment opportunities and salaries of Harvard graduates.

SECTION 2: ED'S NARROWLY-DEFINED INCOME AND OUTCOME MATRIX TO MEASURE THE QUALITY OF EDUCATION

The first challenge for ED is to construct a robust framework to define educational quality. While the concept is abstract and somewhat subjective, education quality can be defined as: "the degree to which education services increase the likelihood of desired education outcomes."[7] In order to measure quality, it is necessary to identify the inputs and outcomes of an investment in education. ED defines inputs as the cost to enroll in postsecondary education and the outcomes as aggregate completion rates and ultimately employment earnings in the labor market. ED simplifies a complex, multidimensional matrix of inputs and outcomes of a diverse student body to a narrowly-defined input and outcome matrix. For inputs, ED only considers educational costs, but not other factors to measure student and institutional inputs such as economic background or prior academic achievement. Regarding outcomes, while employment and earnings are among the top reasons for students to go to college, assessing education quality with these metrics is not simple. For instance, some students go to school to become teachers, while this occupation doesn't generate the largest salary when compared to all occupations, graduates currently teaching have, at least in part, have achieved their post-degree career goal. In addition to economic reasons, other equally important factors such as gaining knowledge, learning new subjects, and improving oneself, are well documented factors for enrolling in postsecondary education. Thus, ED's narrowly-defined matrix covers only a subset of educational outcomes of the student populations.

Education quality is multidimensional and subjective based on the goals and expectations of students. College surveys found that there are many important responses students decide to go to college. A student may enroll to prepare to enter the employment market, to improve his/her existing job, to change a career, to learn a new topic, or to improve oneself.[8] Schools are created to serve different types of students and to help them achieve these goals. Evidently, economic inputs and outcomes are only subset of the multidimensional matrix measuring the quality of education.

Studies have found the economic and demographic backgrounds of students have significant impact on education outcomes.[9] Additionally, academic preparation, interests, and career goals inform student decisions on school choice, degree program and fields of study, which all influence student outcomes. Consequently, we would need an (n x m) matrix to define the quality of education to include n possible outcomes for m groups of student background. Then, we would need to aggregate the complex matrix into an index to rank the quality of educational institutions. If we want to evaluate the impact of accreditors on the quality of education, we would need to expand the matrix with an additional dimension to include institutional characteristics such as the types of programs that are accredited, and criteria used by accreditors to evaluate institutions.

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[6] See, for instance, Kuh, et al. 2006. What Matters to Student Success: A Review of the Literature. National Postsecondary Education Cooperative. July 2016.
[7] Matsudaira. 2016. Defining and Measuring Institutional Quality in Higher Education. February 2016, 3.
[8] See, for instance, Harris Poll conducted for the New America Foundation.
[9] See, for instance, Kuh, et al. 2006. What Matters to Student Success: A Review of the Literature. National Postsecondary Education Cooperative. July 2016.

If students' backgrounds are homogenous and/or irrelevant to the economic and achievement outcomes, the performance of institution would be the most relevant factor in measuring education quality. However, the economic background, prior academic achievements, and demographics of students heavily affect their choice of schools, performance in school, graduation rate, employment opportunities, and earnings. Therefore, it is necessary to adjust for these factors in order to calculate the net contribution of an educational institution to student outcomes. For example, when we compare earnings of a Pell-recipient who graduated from College A to another Pell-recipient who graduated from College B, we assume that these two Pell-recipients are homogenous in a sense that they could apply to either schools, be accepted by both schools, and perform equally well academically in any school. We will also have to find two students who study the same field of study, who have similar occupations, and in the same external macroeconomic environment. Otherwise the results would be misleading. By accident, the system would reward or penalize educational institutions based on their admission process and not their performance. Schools will prefer to accept students with economic background and demographics that have highest probability to graduate, to be employed, and earn more money. Similarly, institutions would be incentivized only to offer programs in fields that have the highest labor market outcomes and neglect the broader purposes of higher education.

We know that student population is not homogeneous. In fact, it is extremely diverse, reflecting the value in the U.S. that postsecondary education should be available and attainable for all.[10] With this in mind, it is essential to acknowledge the diversity in postsecondary student population. Table 2 illustrates this point with a few statistics on student demographics, economic background, and academic preparedness.

Table 2. Student Demographics, Economic Background, and Academic Preparedness[11]

Student Demographics		%
Gender	Male Female	43.0% 57.0%
Age	Under 24 24 and above	85.1% 14.8%
Parents' Highest Education	Less than a Bachelor's Bachelor's or higher	61.6% 38.4%
Transfer status	None 1 or more	82.1% 17.9%
Economic Background		%
Family income	Under $50,000 Over $50,000	60.8% 39.2%
Finically independent	Dependent Independent	48.7% 51.3%

[10] President Obama challenged every American to commit to at least one year of higher education or post-secondary training. The President also set a goal that, by 2020, America would again have the highest proportion of college graduates in the world. From: https://www.whitehouse.gov/issues/education/higher-education

[11] U.S. Department of Education, National Center for Education Statistics, 2011-12 National Postsecondary Student Aid Study; U.S. Department of Education, National Center for Education Statistics, 2011-12 Beginning Postsecondary Students Longitudinal Study, First Follow-up. Computation by NCES QuickStats.

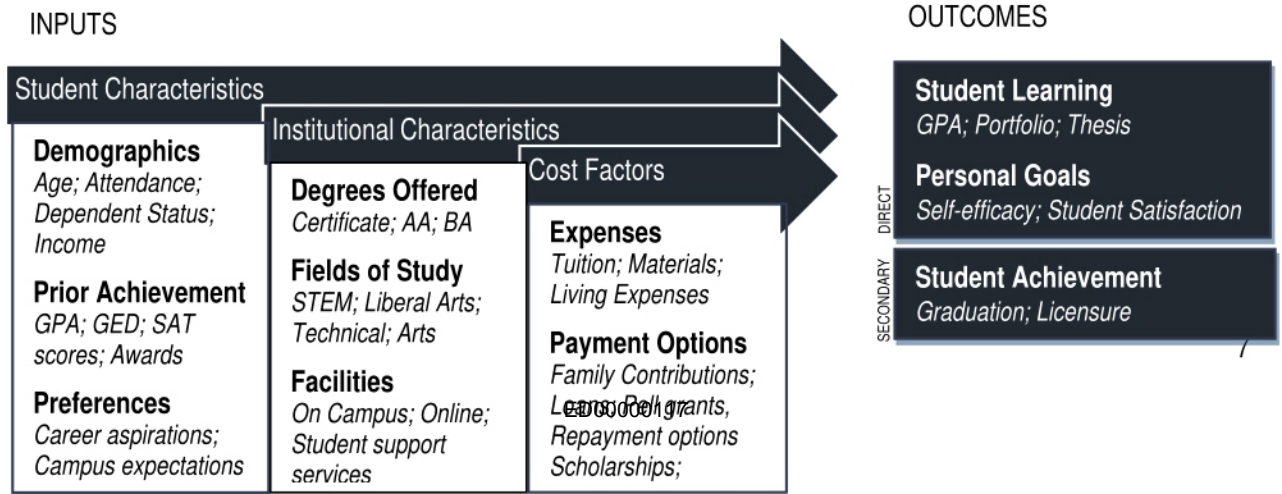
Financial aid recipient	Yes No	70.8% 29.3%
Debt after graduation	Yes No (no debt)	55.8% 44.2%
Academic Achievement		%
High school degree	Diploma GED or other credential	89.1% 10.0%
High school GPA	3.0 or higher Under 3.0	61.9% 38.0%
SAT score	1000 or higher Under 1000	48.8% 51.1%
Merit-only grant recipient	Yes No	11.1% 88.9%

Constructing a Matrix for Measuring Education Quality

Figure 1 below categorizes inputs and outcomes related to quality of education and includes several examples of the components in each input and outcome element. Inputs are categorized into three segments: Student Characteristics, Institutional Characteristics and Cost Factors. To illustrate the complexity of each of these categories, we identify key components and use examples to illustrate factors that influence possible student outcomes. Student outcomes include both direct and indirect measures; we further classify indirect measures as secondary and tertiary measures. A direct measure demonstrates educational quality by assessing student learning or satisfaction. Secondary measures, such as completion rates, assume that, in meeting a milestone such as graduating from a program, students reached their desired education outcomes. Tertiary measures, such as labor market outcomes, are farther removed from education quality itself, and dependent on a wide range of factors such as occupation choice, geographic location and family demographics.

In accordance with current regulation, accreditors primarily use institutional characteristics and direct outcome measures to assess education quality at the institutions they accredit. These indicators include student learning outcomes such as grade point average (GPA) and test scores, and inputs such as the ratio of professors with Ph.D.'s and the maintenance of facilities and learning resources. Recently, it has been suggested that educational quality should be focused on indirect measurements of completion rates such as graduation rates, retention rates, and job placement rates and on indirect measurements of institutional effectiveness such as cohort default rates, 6-year and 10-year earnings, and the 90/10 rule. Leaving other factors and objectives aside, ED focuses on a narrow set of indicators to define the quality of education.

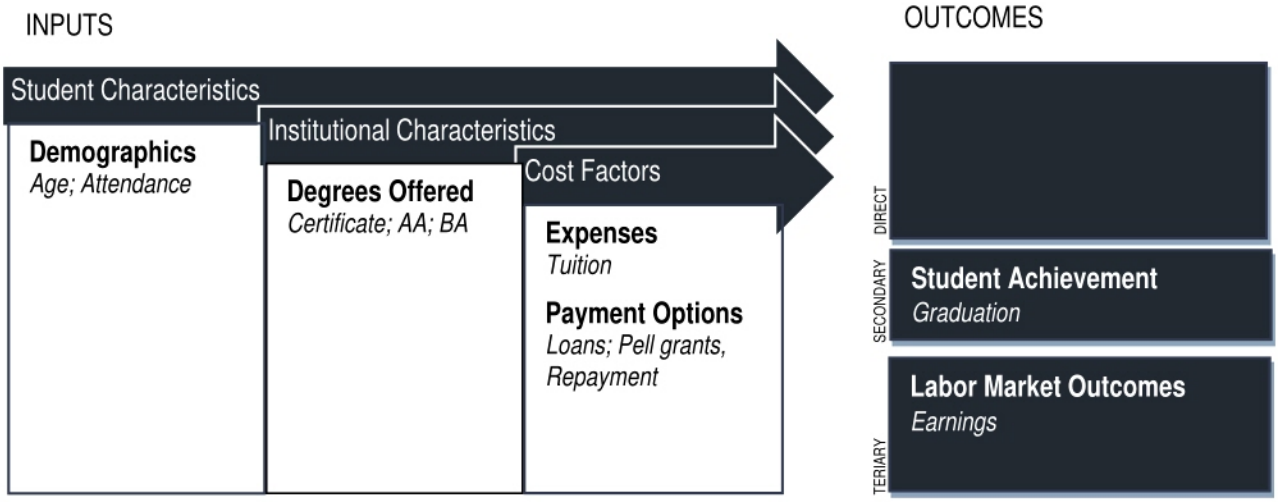
Figure 1. Measuring of Educational Quality



The Department of Education recently releases its "Performance Data by Accreditor (http://www.ed.gov/accreditation) for users to analyze the performance of educational institutions by accreditor. ED uses a matrix of inputs and student outcome indicators to measure the performance of all colleges and universities. ED then correlates student and institutional metrics with accrediting agencies. The ED data of student outcome measurements are drawn from the ED College Scorecard and includes average net price for Title IV recipients, graduation rate, federal loan repayment and default rates, median debt of graduating students, post-school earnings, enrollment of Pell Grant recipients, enrollment of students over age 25 and part-time students, accreditation status, and heightened cash monitoring status.

However, the ED matrix includes primarily indirect measurements of educational quality, and only includes limited inputs. In fact, most are tertiary measurements such as average annual net price for Title IV students, percent of students borrowing Federal loans, median debt of students who graduate, 3-year repayment rate, 3-year cohort default rate, median earning 10 years after enrollment, and percent of students earnings above high school graduate 6 years after enrollment. Figure 2 demonstrates the narrow scope of ED's matrix.

Figure 2. ED's Matrix for Measuring of Educational Quality



A truly comprehensive assessment of quality must include other factors such as prior academic achievement, field of study, and direct student learning outcomes. With such a narrow focus, the ED matrix produces misleading results regarding institutional and accreditor performance.

SECTION 3: LIMITATIONS OF ED PROXIES FOR INCOME AND OUTCOME MATRIX

After defining a robust input and outcome matrix to measure educational quality conceptually (i.e., the first challenge for ED), the second challenge for ED is to identify a set of reliable proxies for costs of education, graduation rate, and economic outcomes. The set of reliable proxies would need to be unbiased, consistent, and complete to accurately measure the quality of education. These proxies would have to be

unbiased among different groups of diverse students, consistent among the same group of indicators in different timeframes, and include complete information to measure educational costs, graduation rates, and labor market outcomes across institutions and/or accreditors. Otherwise, the proxies are unreliable and misleading.

ED selected a set of available indicators from its College Scorecard data for the ED Performance Data by Accreditor to evaluate the performance of individual accreditors. ED uses five indicators (the average annual net price for Title IV students, percent of students borrowing federal loans, median debt of students who graduate, three-year repayment rate, and three-year cohort default rate) to proxy for economic inputs of education (i.e., cost, debt, and repayment). ED uses two indicators (150% graduation rate and 6-year Pell completion rate) to proxy for student achievement and two additional indicators (median earning 10 years after enrollment and percent of students earning above average high school graduate 6 years after enrollment) to proxy for labor market outcomes.

In addition to its simplistic conceptual approach for measuring the quality of education, the ED selected proxies have significant limitations. The underlying data to construct certain indicators are biased on specific demographic and economic groups of students. In number of cases, the selected indicators are derived using only a subset demographic of the student population in an institution and therefore are not representative of larger groups of students. Furthermore, several selected indicators contain only partial information and fail to provide a complete analysis. As results, ED indicators are biased, inconsistent, and incomplete to be reliable proxies to measure the quality of education for the diverse postsecondary student body. Figure 3 summarizes the sources of biasness, inconsistency, and incompleteness of those nine indicators that ED uses as proxies to measure the quality of education to compare across educational institutions and accreditors.

Figure 3. Sources of Biasness, Inconsistency, and Incompleteness of Indicators Used as Proxies to Measure the Quality of Education

Biasness: *An indicator produces results that only apply to a specific group of students and not others.*	• In-state vs out-of-state tuition • First time, full time, fall semester vs. non-traditional students • Lower-income groups • Dependent status • Other demographics
Inconsitency: *An indicator produces results with varying correlations or are selected using arbitrary criteria.*	• Correlation of proxies within an input or outcome category • Arbitrary time horizon (6-yr, 8-yr, 10-yr) of earnings and graduation/completion
Incompleteness: *An indicator produces results that provide inaccurate information.*	• Other sources of funding for educational costs • Other extended repayment plans • Other determinants of CDR • Increments of earnings vs level of earnings

Furthermore, the shortcomings due to the data limitations become more severe when ED aggregated the indicators by accreditor. The ED indicators fail to capture the quality of education of different type of institutions that are created to serve different types of students who have different education objectives. These factors are essential to consider when measuring the quality of education; holding them constant to compare across intuitions or accreditors is misleading and results in erroneous conclusions about institutional effectiveness and accreditor performance. These limitations and shortcomings are summarized in Table 3.

Table 3. Limitations and Shortcomings of 9 Indicators in the ED Performance Data by Accreditor

Indicator	Limitations of the Underlying Data	Shortcomings of Indicator When Used to Measure Educational Quality and to Compare Across Educational Institutions and Accreditors
Cost, Debt, and Repayment Indicators		
Average annual net price for Title IV students	• Only first time, full time, fall semester Title IV-receiving students. • Tuition and fees, books and supplies, and living expenses minus the average grant and scholarship. • Only in-state tuition for public schools.	• The indicator is biased among groups of students: Grants and scholarships vary substantially across student economic background and academic performance and in-state and out-of-state tuitions are different for public and private schools. • The indicator provides inconsistent results with other proxies to measure costs of education. • The indicator has incomplete information and is lacking of theoretical foundation or empirical findings to show a relationship between educational costs and the quality of education.
% of students borrowing federal loans	• Only students who are eligible for low-interest federal loans. • Excludes family financial contributions, loans from other sources, federal and state grants, and merit scholarships offered by schools.	• The indicator is biased on income group and type of school. Students' economic background and academic performance influence other sources of funding substantially which in turns derive the eligibility and the amount of the federal student loans. Other funding sources also depend on the fund availability of an educational institution. • The indicator produces inconsistent results with other proxies to measure costs of education. • The indicator is incomplete because it does not reflect other sources of funding for educational costs of a typical student in an institution.
Median debt of students who graduate	• Similar to "% of students borrowing federal loans" indicator. • Debt is an accumulation of loans and therefore varies with length of schools and programs.	• Similar to "% of student borrowing federal loans" indicator. • The indicator also bias and inconsistent with the length of schooling and therefore loan amounts.

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Three-year repayment rate	• Similar to "median debt of students who graduate" indicator. • Excludes students who opt to extended repayment plans.	• Similar to "median debt of students who graduate" indicator. • The indicator is inconsistent since the repayment rate increases with time and the 3-year period is arbitrary. • This indicator is inconsistent because several schools have a small number of borrowers entering repayment. At other schools, only a small portion of the student body takes out student loans. (ED acknowledges that the cohort default rate should be interpreted with caution.[12]) • The indicator is incomplete because it does not consider students who opt to extended repayment plans.
Three-year cohort default rate (CDR)	• Similar to "3-year repayment rate" indicator.	• Similar to "3-year repayment rate" indicator. (ED acknowledges that "Some schools have a small number of borrowers entering repayment. At other schools, only a small portion of the student body takes out student loans. In such cases, the cohort default rate should be interpreted with caution."[13])
Student Achievement Indicators		
150% graduation rate	• Only first time, full time, fall semester. • Graduated from the original institution.	• The indicator is biased on traditional students who are not part-time students, transfer students, and spring/summer students.
6-year Pell completion rate	• 6 years for any level of education. • Only first-time aid recipient for both full- and part-time students. • Graduated from the original institution.	• A 6-year period is biased and inconsistent among certificate, associate's, and bachelor's degree programs. • The indicator is biased on students who are first-time aid recipients and not transfer students.
Labor Market Outcomes Indicators		
Median earnings 10 years after enrollment	• Report part- and full-time job earnings after 10 years of enrollment regardless of how many years in school.	• The working years (10 years minus the number of years in school) are biased and inconsistent among certificate, associate's, and bachelor's degree programs that have different years in schools.

[12] US Department of Education, Federal Student Aid. 2015. National Default Rate Briefings for FY 2012 3-Year Official Rates. September 30, 2015.
[13] US Department of Education, Federal Student Aid. 2015. National Default Rate Briefings for FY 2012 3-Year Official Rates. September 30, 2015.

	• Report the level of income and not the increment of earnings. • Assign students to their first enrolled institutions and not to the institutions where they graduated. • Only Title IV-receiving students.	• The indicator is biased on institutions that have high rates of transferred students. • The indicator is inconsistent since earnings increase over time; an arbitrary 10-year threshold does not account for the payoffs over a lifetime. • The indicator is incomplete because an increment earning is more accurate than the earning level for measuring the value of an increment education. • The indicator is incomplete because earnings by program produce meaningful information since earnings vary by occupation, geographic location, and other factors. • The indicator is incomplete because earnings are driven by other factors including education attainment, occupation, gender, race, age, and other factors.
% of students earning above average high school graduate 6 years after enrollment	• Report part- and full-time job earnings after 6 years of enrollment regardless of how many years in school. • Assigned students to their first enrolled institutions and not to the institutions where they graduated. • Only Title IV-receiving students.	• The working years (6 years minus the number of years in school) are biased and inconsistent among certificates, associate's, and bachelor's degree programs. • The indicator is biased on institutions that have high rates of transferred students. • The indicator is inconsistent since earnings increase over time; an arbitrary 6-year threshold does not account for the payoffs over a lifetime. • The indicator is incomplete because earnings by program produce meaningful information since earnings vary by occupation, geographic location, and other factors. • The indicator is incomplete because earnings are driven by other factors including education attainment, occupation, gender, race, age, and other factors.

The set of indicators that ED selected to use as proxies to measure education costs, graduation rates, and labor market outcomes are biased on certain income and demographic groups, are inconsistent and are constructed using arbitrary criteria, and provide incomplete information. These limitations are detailed below.

Biasness

A biased indicator is one that produces results that only apply to a specific group of students and not others. The indicators that ED uses as proxies for educational costs are biased on traditional students groups. The indicators are constructed from the data of students who are first-time, full-time, fall semester,

Title IV-students, and in-state students. The indicators are biased and do not provide meaningful information for nontraditional students and out-of-state students.

For example, the indicator of "the average annual net price for Title IV students" is a biased proxy to measure educational costs. The average annual net price for Title IV students includes tuition and fees, books and supplies, and living expenses, minus the average grant and scholarship aid. It is calculated for all full-time, first-time, degree/certificate-seeking undergraduates who receive Title IV aid. For academic-year institutions, net price represents an average of all programs and includes only undergraduates who first enrolled in the fall term. For non-academic-year institutions (program or continuous enrollment), net price represents the program with the largest enrollment at the institution for the length of the full program and it includes undergraduates who first enrolled at any time during the academic year. This metric is limited to undergraduates who pay in-state tuition and receive Title IV aid in public institutions and all undergraduates who receive Title IV aid in private institutions.

Thus, by construction, the net price indicator of public institutions is lower than private institutions since it uses in-state tuition for public institutions. The out-of-state net price of public institutions averages 160% higher than in-state net price of public institutions. The share of out-of-state students in private nonprofit institutions and private for-profit institutions are much larger than public institutions. For private nonprofit institutions, 17.5% students in less-than-4-year institutions, 33.7% students in 4-year non-doctorate granting institutions, and 42.6% students in 4-year doctoral granting institutions are out-of-state. For private for-profit institutions, 62.1% students at 4-year non-doctorate granting is out-of-state and between 14% and 18% students in all other institutions are out-of-state (Table 4).

Table 4. Percentage of Undergraduates Attend Institution Out-of-State of Legal Residence[14]

	Public	Private nonprofit	Private for-profit
Less-than-2-year	3.3%		13.7%
2-year	5.2%	17.5% (*)	17.7%
4-year non-doctorate granting	6.9%	33.7%	62.1%
4-year doctorate granting	11.4%	42.6%	15.1%

(*) private nonprofit less-than-4-year institutions

Another example of biasness is found in the proxy "6-year Pell completion rate" that ED uses for student achievements. In this case, the indicator is biased on the degree level. The indicator tracks students who have ever receive a Pell grant and their graduation/completion status six years from their enrollment dates. This group includes only first-time aid recipients that graduated from the original institution. The arbitrary 6-year of completion applies to all students enrolled in certificate, associate's, and bachelor's degree programs. Thus, the indicators would have 600% graduation rate for 1-year certificate programs, 300% graduation rate for 2-year associate's degrees, and 150% of graduation rate for 4-year bachelor's degrees for full-time students, and 300%, 150% and 75% graduation rates, respectively, for students enrolled half-time (Table 5).

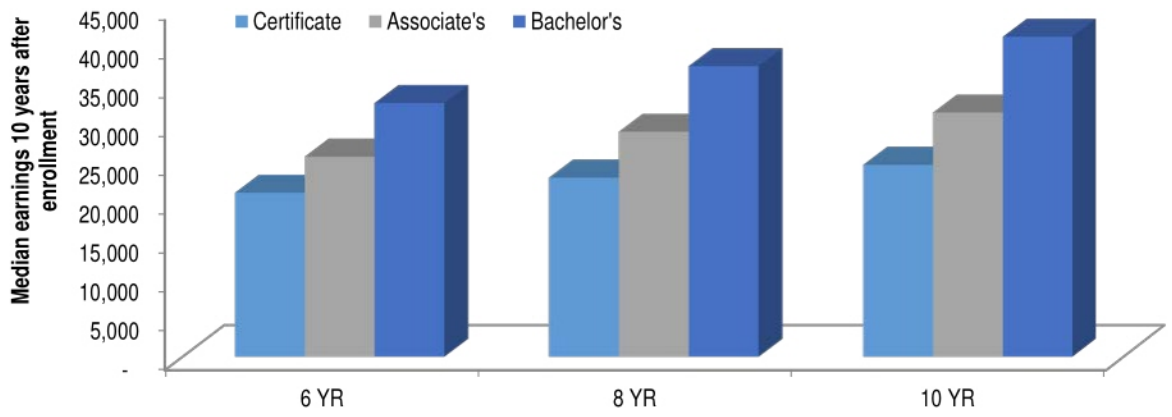
[14] U.S. Department of Education, National Center for Education Statistics, 2011-12 National Postsecondary Student Aid Study; computation by NCES QuickStats.

Table 5. Graduation Terms for Pell Completion Rates

Degree Program	Graduation Term –Full Time	Graduation Term –Part Time
1 Year Certificate	600%	300%
2 Year Associate's	300%	150%
4 Year Bachelor's	150%	75%

Indicators that ED uses as proxies for labor market outcomes are also biased on the degree level. Since earnings are increasing non-proportionally and non-linear overtime across educational attainments, wage differentials are therefore different across educational attainments at different times from the enrollment date. By comparing wage differentials in the shorter-time horizon, the results are biased on shorter programs (Figure 4).

Figure 4. Earnings by Degree during Different Time Horizons[15]



Inconsistency

ED indicators are inconsistent proxies to measure the quality of education. The limitation is apparent when an indicator produces results that vary in their correlative properties with other indicators or are selected using arbitrary criteria. ED uses five indicators to measure the costs of education, but the correlation between these indicators is not consistent. Additionally, ED uses two indicators to measure labor market outcomes using arbitrary 6-year and 10-year time horizons. The results are inconsistent for different educational attainment.

ED uses five indicators (the average annual net price for Title IV students, percent of students borrowing federal loans, median debt of students who graduate, 3-year repayment rate, and 3-year cohort default rate) to measure costs of education. However, the results are inconsistent with each other. For example, the data shows there is a positive correlation (27.2%) between the percent of students borrowing federal loans and the 3-year cohort default rate, suggesting a higher number of students borrowing federal loans leads to a higher the number of defaults. But the data also shows a negative correlation (-14.8%) between

[15] U.S. Department of Education, 2011-12 College Scorecard Data.

median debt of students who graduate and the 3-year cohort default rate, suggesting a higher the amount of debt leads to a lower the default rate. This contradicts the positive correlation between percent students borrow federal loans and the amount of debt (38.2%) (Table 6).

Table 6. Correlation between Cost, Debt, and Repayment Indicators

	Average Annual Net Price for Title IV Students	% of Students Borrowing Federal Loans	Median Debt of Students Who Graduate	3-year Repayment Rate	3-year Cohort Default Rate
Average Annual Net Price for Title IV Students	1.000				
% of Students Borrowing Federal Loans	0.506	1.000			
Median Debt of Students Who Graduate	0.435	0.382	1.000		
3-year Repayment Rate	0.137	-0.138	0.198	1.000	-
3-year Cohort Default Rate	-0.026	0.272	-0.148	-0.775	1.000

Inconsistencies are also found in ED's labor market outcome proxies. As such, the two proxies (median earnings 10 years after enrollment and percent of students earning above average high school graduate 6 years after enrollment) are not fit to measure the quality of education. The 6-year and 10-year time horizons are two arbitrary time periods. Studies have shown return on education increases over years and peaks at later in the lifetime.[16] Since earnings are increasing nonlinear over 6 years, 10 years, or even 30 years after enrollment across education groups, earning differentials between education groups are expected to be wider over the years. In fact, a CollegeBoard study calculated the break-even ages for postsecondary earnings compared to high school graduate by degree. Its baseline shows the break-even point for an associate's degree-holder compared to his/her high school counterpart when the associate's degree-holder graduate reaches 34 years old. In other words, the Associate's degree-holder can expect to earn enough by age 34 to compensate for being out of the labor force for two years and for borrowing the full tuition and fee amount without grant aid.[17] The break-even for a bachelor's graduate is when he/she reaches 36 years old (Table 7). Thus, the contributions of education on earnings are different in a short-term than in the long-term.

[16] See, for instance, Carnevale, et al. 2011. The College Payoff: Education, Occupations, Lifetime Earnings. THE Georgetown University Center on Education and the Workforce.
[17] Baum, et al. 2013. Education Pays: The Benefits of Higher Education for Individuals and Society. CollegeBoard. 2013.

Table 7. Break-even Ages for Earnings Compared to High School Graduate[18]

	Associate's vs. High School Graduate	Bachelor's vs. High School Graduate
Baseline	34	36
Alternative Assumptions		
1. In-state tuition and fees at public four-year institutions instead of weighted average of public and private nonprofit four-year tuition and fees	34	33
2. Longer time to degree: 3 years out of the labor force and 3 years of tuition borrowed for associate degree recipients; 5 years out of the labor force and 5 years of tuition borrowed for bachelor's degree recipients	38	37
3. Borrowing weighted net tuition and fees (tuition and fees minus all grants and tax benefits)	32	32
4. Work average amount in college instead of no earnings	30	34
5. Based on all workers instead of just full-time year-round	30	33

Completeness

Lastly, the ED indicators that are used as proxies for the quality of education do not provide complete information. Several ED indicators cannot be used alone since they produce incomplete information. For example, the percent of students borrowing federal loans cannot be used alone to be a proxy for educational costs. In looking at ED's percent of students borrowing federal loans, between 61.3% and 73.1% students that attend private for-profit educational institutions borrow federal loans. The numbers are higher than their counterparts in public and private nonprofit educational institutions. This suggests that public and private nonprofit institutions have lower costs and students do not have to borrow federal loans to pay for their education.

However, the percent of students borrow federal loans mislead prospect students and their families. The shares of students who are not eligible for federal aid are much higher in public and private nonprofit educational institutions than in private for-profit schools. Yet, students attending private for-profit institutions have lower incomes than their counterparts in public and private nonprofit institutions. In fact, only between 30% and 40% of students attending less-than-four-year private for-profit institution have any expected family contribution, compared to as high as 73% in public and 76.8% in private nonprofit institutions. More than 60% of parents of students attending private nonprofit colleges earn more than $63,000 per year while more than 60% of parents of students attending private for-profit colleges make less than $30,000 per year. Less than 5% of students attending private for-profit institutions receive state grants and only between 1% and 3% of receive merit grants. In contrast, as high as 24% of students attending public and private nonprofit receive state grants and nearly 40% of students in private nonprofit receive merit grants (Table 8).

[18] Baum, et al. 2013. Education Pays: The Benefits of Higher Education for Individuals and Society. CollegeBoard. 2013.

Table 8. Federal Loans and Sources of Financial Support (% of Students)[19]

	Federal Loans	Not Applied for Federal Aids	Family Contributions	State Grants	Merit Grants
Public <4 yrs	20.1~16.7	20.2~39.4	42.2~59.0	11.2~11.7	1.6~4.0
Public 4 yrs	37.4~53.4	27.6~30.4	64.9~73.0	18.7~24.0	8.3~17.1
Private nonprofit <4 yrs	46.6	24.3	47.7	8.4	4.9
Private nonprofit 4 yrs	57.8~61.3	21.5~26.5	72.1~76.8	17.7~24.1	36.9~39.1
Private for-profit <4 yrs	61.3~74.5	9.2~14.2	30.3~40.6	2.9~4.5	1.0~3.2
Private for-profit 4 yrs	73.1	12.9	44.2	4.9	1.2

ED's graduation measure is incomplete. In order to produce a meaningful metric, the performance of transfer students should be evaluated. Because of the construction of the indicator (including only graduates from their original institutions), institutions that predominately offer associate's degrees are perceived to have poor performance because of their lower graduation rates. However, a significant portion of students who attend 2-year programs transfer to four-year institutions. Consequently, there are two shortcomings of the 150% graduation rate indicator to use as a proxy to measure the graduation rates. The first shortcoming is that the indicator underestimate the performance of two-year programs. A study by Columbia University estimated that 25% of students who enrolled in community colleges transfer to a four-year program. Among those students who transfer to four-year programs, only 20% receive an associate's degree and 80% transfer without receiving an associate's degree. The second shortcoming is the indicator also underestimates the performance of the four-year institutions where transferred students graduate. The same study shows that the completion rate of transfer students at four year programs was 65%. Nevertheless, the indicator does not count these transferred students who graduate from four-year institutions because the indicator only counts graduates from the original schools.

Finally, the median earnings and percent of students earning above high school reliable proxies do not provide complete information on the labor market outcomes and therefore cannot be used to assess the quality of education. Earnings are not only based on the educational attainment. According to the Bureau of Labor Statistics (BLS), earnings are widely different among occupations within the same degree level. For example, among 40 different BLS occupations that required an associate's degree, 21 occupations pay between $35,000 and $55,000 per year while other 15 occupations pay between $55,000 and $75,000 per year. Two occupations pay more than $75,000 per year while other two occupations pay less than $35,000 per year (Table 9). Thus, median income by degree does not provide sufficient information for students to make choices for schools.

[19] U.S. Department of Education, National Center for Education Statistics, 2011-12 National Postsecondary Student Aid Study.

Table 9. Number of Occupations by Earning Bracket and by Education Attainment[20]

Level of Education	Less than $25,000	$25,000 to $34,999	$35,000 to $54,999	$55,000 to $74,999	$75,000 or more	Total
Doctoral or professional degree	0	0	0	25	35	60
Master's degree	0	1	7	12	13	33
Bachelor's degree	0	2	33	50	57	142
Associate's degree	0	2	21	15	2	40
Postsecondary non-degree award	3	11	15	8	0	37
Some college, no degree	1	0	3	0	0	4
High school diploma or equivalent	15	67	93	13	5	193
No formal educational credential	30	19	13	1	0	63
Total	49	102	185	124	112	572

SECTION 4: SHORTCOMINGS OF COMPARING ED PROXIES TO MEASURE EDUCATIONAL QUALITY ACROSS SCHOOLS AND ACCREDITORS

The objective of the ED Performance Data by Accreditor is to make it easier to assess the performance of accreditors as it relates to the quality of education. The aggregated data of education costs, graduation rates, and labor market outcomes of all educational institutions in the national and regional accreditors' portfolios are designed by ED to compare across accreditors. The dataset, with caveats and limitations, suggests that the performance of national accreditors is lower than the performance of regional accreditors. According to ED datasets, schools accredited by national accreditors have higher educational costs, more students borrow federal loans, lower federal debt, lower repayment rates, higher cohort default rates, higher graduation and completion rates, but nonetheless lead to lower earnings compared to schools accredited by regional accreditors (Table 10).

Table 10. Comparisons between National and Regional Accreditors' Portfolios[21]

	National	Regional
Cost, Debt, and Repayment		
Average annual net price for Title IV students	$16,246 ($1,220~$87,570)	$15,182 ($172~$47,611)
% of students borrowing federal loans	58% (0%~100%)	49% (0%~100%)
Median debt of students who graduate	$13,128 ($724~$53,832)	$20,534 ($2,000~$50,437)
3-year repayment rate	49% (0%~100%)	68% (0%~100%)
3-year cohort default rate	15%	12%

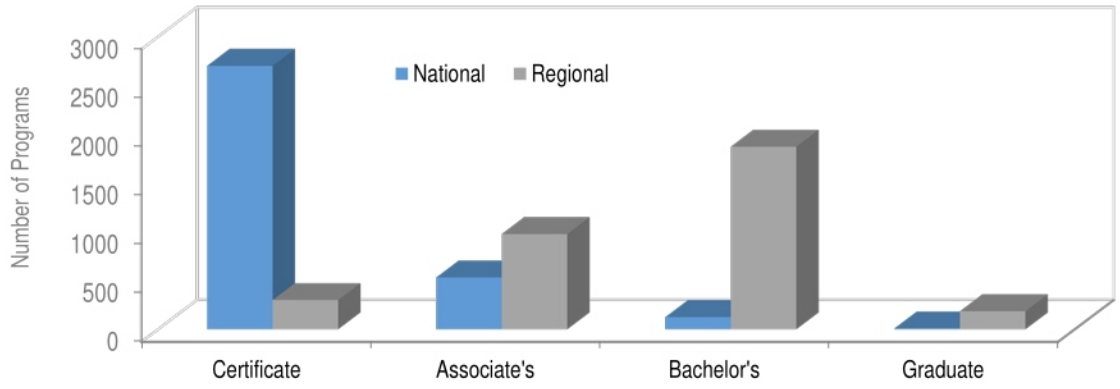
[20] U.S. Bureau of Labor Statistics. 2015. Occupational Outlook Handbook.
[21] U.S. Department of Education. Performance Data by Accreditor.

	(0%~100%)	(0%~67%)
Completion Rates		
150% graduation rate	64% (2%~100%)	41% (2%~100%)
6-year Pell completion rate	47% (0%~86%)	35% (0%~89%)
Labor Market Outcomes		
Median earnings 10 years after enrollment	$25,524 ($8,400~$169,600)	$38,598 ($11,600~$250,000)
% of students earnings above high school graduate 6 years after enrollment	39% (4%~98%)	59% (13%~100%)

The simplistic approach by ED to aggregate the economic costs and outcomes of individual students and educational institutions in accreditors' portfolios has shortcomings. The averages and medians do not reflect the complexity of postsecondary schools in the U.S. and cannot be used to evaluate the performance of accreditors. The portfolios of national and regional accreditors are not comparable because accreditors have different types of schools and students. Consequently, proxies of the ED input and outcome matrix, which assume students are homogenous across portfolios, are not comparable between national and regional accreditors' portfolios. As results, the limitations of indicators have noteworthy shortcomings when comparing across educational institutions and accreditors.

The characteristics of students in the portfolio of national accreditors are substantially different than those in the portfolio of regional accreditors. The majority of certificate programs are accredited by national accreditors while associate's, associate's, bachelor's, and graduate degrees are accredited by regional accreditors (Figure 5). It is well understood that, when comparing institutional performance, it is best to compare those with similar programs (e.g., it is more informative to compare a four-year bachelor's degree-granting school to another four-year bachelor's degree-granting school) than to one that offers a two-year associate's degree. This applies at the accreditor level as well. Each accreditor has a unique portfolio of institutions that it accredits. Comparing an accreditor with a high share of certificate degree-granting programs to one that exclusively includes graduate-level programs would produce misleading results.

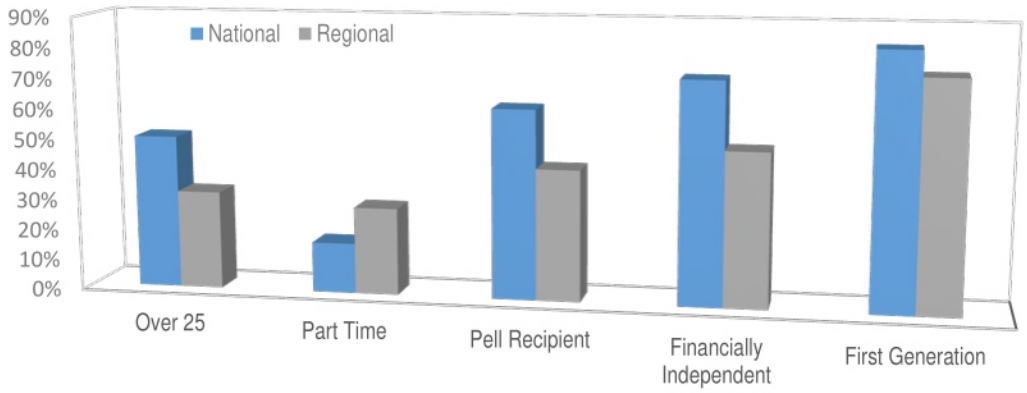
Figure 5. Types of Degrees in National and Regional Accreditors' Portfolios[22]



[22] U.S. Department of Education. Performance Data by Accreditor.

As we have discussed previously, student characteristics are an important component of measuring education quality. Therefore, to evaluate performance of institutions, it is necessary to account for student characteristics that influence outcomes. Statistics show that higher shares of students in the national accreditors' portfolio are financially independent, first generation going to college, and are Pell recipients (Figure 6).

Figure 6. Student Characteristics in National and Regional Accreditors' Portfolios[23]



Selective admissions policies allow schools to select the students who are the best fit for their institution and most likely to succeed. Ivy League schools, like Harvard University, have very low acceptance rates, and serve students with very high prior academic achievement. Alternatively, open enrollment allows students with a high school diploma or GED to enroll in postsecondary education regardless of prior academic achievement or background. As a result, the student body at Harvard University is vastly different than an institution with open admissions, which leads to diverse student outcomes. Clearly, it is inappropriate to compare institutions with different types of enrollment policies. Furthermore, when institution-level data are aggregated at the accreditor level, the differences in enrollment policies for institutions in an accreditor's portfolio will be reflected in aggregated data. Looking at the admissions policies of nationally and regionally accredited intuitions, nearly 90% of educational programs and degrees in the portfolio of national accreditors have open enrollment compared to 45% of those in the portfolio of regional accreditors (Figure 7).

Figure 7. Percent of Institutions with Open Enrollment Policies by Accreditor[24]

[23] U.S. Department of Education. Performance Data by Accreditor; U.S. Department of Education. College Scorecard Data.
[24] U.S. Department of Education. Performance Data by Accreditor; U.S. Department of Education. National Center for Education Statistics. Institutional Characteristics Survey.

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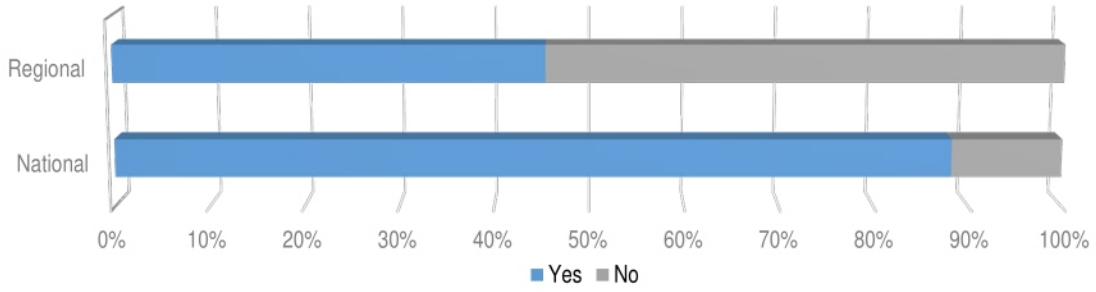
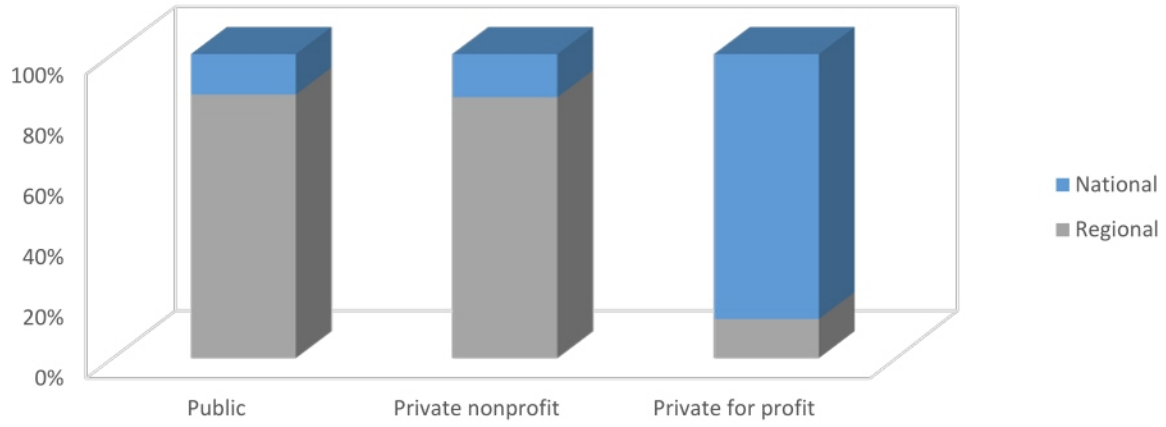


Accreditors also specialize in accrediting different types of schools. Currently, more than 80% of public and private for-profit educational institutions are accredited by national accreditors while 90% of private for-profit institutions are accredited by national accreditors (Figure 8). Notably, this difference comes into play when considering the costs of education. It is important to acknowledge that public schools are heavily subsidized by state, local and national taxpayer dollars, and therefore can offer a lower cost education to postsecondary students.

Figure 8. Accreditors by Type of Institution[25]



The differences in the ED economic input and outcome matrix between national and regional accreditors' portfolios are therefore explained by the characteristics of students rather than the performance of accreditors. Since there are more disadvantaged students (i.e., independent, Pell recipients, and first generation) in the portfolio of national accreditors, it is expected that this "at risk" student group would have higher share of students borrowing federal loans, lower repayment rates, and higher default rates. For example, the differences between these demographics and their counterparts are demonstrated in Table 11 below. Notably, the difference in median debt for independent students that received associates degrees was over 27% higher than dependent students. Similarly, independent students' median debt was over 20% higher at the certificate level.

Table 11. Median Debt by Demographic and Degree Type[26]

[25] U.S. Department of Education. Performance Data by Accreditor; U.S. Department of Education. National Center for Education Statistics. Institutional Characteristics Survey.

	All	Certificate	Associate's	Bachelor's
Independent students	$12,217	$9,538	$11,942	$16,974
Dependent students	$11,193	$7,846	$9,346	$15,383
Pell recipients	$12,568	$9,198	$11,236	$17,371
Non-Pell recipients	$11,445	$8,545	$9,475	$15,002
First generation going to college	$12,122	$8,833	$10,891	$16,872
Non-first generation	$11,903	$8,768	$10,675	$16,386

Repayment rates are also explained by economic and social factors. As expected, "at risk" students such as independent students, Pell recipients, and first generation going to college have lower repayment rates than other graduates (Table 12). Across the board, these students produce lower repayment rates than their counterparts.

Table 12. Repayment Rates by Demographic and Degree Type[27]

	All	Certificate	Associate's	Bachelor's
Independent students	50%	62%	47%	46%
Dependent students	65%	74%	61%	58%
Pell recipients	52%	65%	47%	45%
Non-Pell recipients	72%	79%	69%	67%
First generation going to college	56%	69%	52%	49%
Non-first generation	61%	75%	56%	52%

Earnings increase with the educational attainment. As shown in ED Performance Data by Accreditor, median annual earnings 10 years after enrollment are $24,498 per year for certificate holders, $30,798 per year for associate's degrees, and $42,196 per year for bachelor's degrees. Similarly, the shares of students earnings above average high school graduate 6 years after enrollment are increasing with educational attainment. Since more than 75% of total programs in the portfolio of national accreditors are certificates, earnings of students in the portfolio are expected to be lower than the portfolio of regional accreditors where more than 60% are bachelor's and graduate degrees (Table 13).

Table 13. Earnings by Degree Type[28]

[26] U.S. Department of Education. Performance Data by Accreditor; U.S. Department of Education. College Scorecard Data.
[27] U.S. Department of Education. Performance Data by Accreditor; U.S. Department of Education. College Scorecard Data.
[28] U.S. Department of Education. Performance Data by Accreditor.

	Certificate	Associate's	Bachelor's
Median earnings 10 years after enrollment	**$24,498**	**$30,798**	**$42,196**
National accreditors' portfolio	$23,765 ($8,400~$64,700)	$30,644 ($12,600~$88,700)	$30,533 ($19,700~$62,200)
Regional accreditors' portfolio	$28,701 ($15,700~$49,000)	$30,877 ($11,600~$85,800)	$42,725 ($14,500~$166,200)
% of students earnings above high school graduate 6 yrs after enrollment	**38%**	**49%**	**63%**
National accreditors' portfolio	37% (4%~92%)	48% (12%~92%)	51% (20%~91%)
Regional accreditors' portfolio	47% (13%~80%)	49% (15%~99%)	64% (16%~97%)

One key limitation of the 150% graduation rate is that it excludes the performance of non-first time students with enroll at an institution, and penalizes schools, like community colleges, that grant degrees but also serve as a stepping stone to a four year programs. This biasness draws erroneous conclusions when aggregated at the accreditor level, specifically leading one to believe that students who attend regionally accredited Associate's degree granting institutions perform significantly worse than their nationally accredited counterpart.

Table 14. 150% Graduation Rates by Degree Level and Accreditor Type[29]

	Certificate	Associate's	Bachelor's
150% Graduation Rate	**64%**	**33%**	**50%**
National accreditors' portfolio	67% (5%~100%)	48% (10%~100%)	42% (2%~100%)
Regional accreditors' portfolio	32% (4%~100%)	25% (2%~91%)	51% (2%~100%)
Pell Completion Rate	**38%**	**49%**	**63%**
National accreditors' portfolio	50% (0%~86%)	43% (0%~79%)	42% (0%~75%)
Regional accreditors' portfolio	16% (0%~75%)	19% (0%~73%)	44% (0%~89%)

It is clear when breaking down the indicators that it is inappropriate and inaccurate to use these aggregated data to compare across institutions and accreditors because too many factors that influence education quality are held constant. In order for ED to achieve its objective of assessing the performance of accreditors that contributes to the quality of education, it is necessary to control for the student and

[29] U.S. Department of Education. Performance Data by Accreditor

institutional characteristics. ED's simplistic approach hurts, instead of helps, prospective students and policymakers evaluate the quality of education.

SECTION 5: CONCLUSIONS

There are three main challenges to measuring education quality and to measure the performance of accreditors: (1) defining a comprehensive matrix to measure the quality of education conceptually; (2) identifying and constructing reliable proxies for the elements of the conceptual matrix to quantify the quality of education; and, (3) aggregating each indicator to compare across educational institutions and accreditors.

ED's interactive College Scorecard and Performance Database by Accreditor stem from a very narrow matrix of inputs and outcomes. The ED framework does not include important inputs such as prior academic performance, fields of study, and non-federal financial assistance nor the direct outcomes such as student learning. Even if it was ED's intention to measure education quality with a narrowly focused matrix of inputs and outcomes, the indicators selected by ED are not reliable proxies. These indicators provide biased, inconsistent, and incomplete information for prospect students, families, and policymakers. The shortcomings of ED framework and proxies are compounded when aggregated at the institution level, and even more so at the accreditor level.

Overall, the conceptual framework is too simplistic to be used for the purpose of assessing a multidimensional postsecondary student body. The aggregated indicators that are used as proxies for the input and outcome elements are faulty and produce misleading results of the quality of education and the performance of educational institutions and their accreditors. Additional work is needed to improve the conceptual model of the quality of education as well as the data of the proxies used to measure the quality of education.

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