

National Institute for Learning Outcomes Assessment

May 2015

Improving Teaching, Learning, and Assessment by Making Evidence of Achievement Transparent

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Occasional Paper #25

www.learningoutcomesassessment.org

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Support for this research was provided by a grant from the Teagle Foundation.

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Abstract

Technology can change higher education by empowering students to make an impact on the world as undergraduates. Done systematically, this would allow institutions to close the credibility gap with an increasingly dubious public. Authentic student achievements that are addressed to a *real world* audience can lead to richly detailed *Resume 2.0* portfolios of work that add value to degrees and the granting institutions. A guide is provided for implementation of new high-impact practices, including structured assignment creation.

Improving Teaching, Learning, and Assessment by Making Evidence of Achievement Transparent

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Introduction

In April 2012, Martha Payne, a middle-school student in Scotland, began documenting the size and quality of her school lunches on Neverseconds.blogspot.com. Her photos and descriptions of the deplorable lunch offerings eventually generated worldwide attention (undoubtedly aided by her school's administration trying to stop her) (McKenna, 2014). Through her website and other activities, Martha now raises money and awareness to support healthy school lunches around the world.

The Internet empowers people in unprecedented ways; Martha's impact could not have occurred in 1990. Colleges and universities have not yet caught up to this change. Despite the many advances in delivering instruction, we can do more to develop and promote student accomplishment. We can expect—and indeed demand—that our students make positive contributions to the world *while they are still students*, and the electronic record of that accomplishment can form the basis of a portfolio of evidence toward this end.

We propose enhancing course instruction and evaluation with externally-facing, meaningful experiences, where the Internet can be used to enable and document student contributions. This naturally creates evidence of achievement that can be used for multiple purposes: for student portfolios, for internal assessment and improvement, and to develop a public record of student accomplishments.

Public Credibility

The assignment of credit in higher education encompasses a range of activities including locally-constructed assessments and grades, national standardized instruments, credit-for-competency tests, badge systems, and letters of completion. In some cases, like visual arts, actual student work can be shown as an educational product, but this is not the primary way that educational accomplishment is certified.

Grades and scores are incapable of capturing the complex interactions between students and their academic accomplishments. The tension between the necessary rigidity of formalized assignments of merit and the underlying reality is captured in this quotation from the Council for Higher Education Accreditation (CHEA):

[It] is imperative for accrediting organizations—as well as the institutions and programs they accredit—to avoid narrow definitions of student learning or excessively standardized measures of student achievement. Collegiate learning is complex, and the evidence used to investigate it

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must be similarly authentic and contextual. But to pass the test of public credibility—and thus remain faithful to accreditation’s historic task of quality assurance—the evidence of student learning outcomes used in the accreditation process must be rigorous, reliable, and understandable. (2003, p. 6)

The “test of public credibility” is of utmost importance—perhaps more so now than when these words were written. The quotation advises that rigor, reliability, and understandability are prerequisites to public credibility. This is not the case. For instance, large numbers of Americans believe in ghosts (Lipka, 2013) despite lack of scientific evidence of their existence, and large numbers do not believe in anthropogenic climate change in opposition to overwhelming scientific evidence. We propose a new standard: student accomplishment should be obvious to stakeholders. Rather than certify *the ability to accomplish* (*viz.* learning) with standardized scores, institutions of higher education are better off demonstrating student accomplishment with direct evidence that is convincing to a non-expert. Indeed, much of the public debate about higher education focuses on outcomes that are obvious and meaningful to non-experts, like time to graduation, job placement after graduation, the amount of loan debt incurred, and the default rates on those loans. In contrast, consider the learning outcomes of one particular course taught at Stanford, which became the subject of an article in the New York Times. The purpose of the course was to learn how to make Facebook applications (apps). Here’s what happened next:

The students ended up getting millions of users for free apps that they designed to run on Facebook. And, as advertising rolled in, some of those students started making far more money than their professors. . . . Almost overnight, the Facebook Class fired up the careers and fortunes of more than two dozen students and teachers here. It also helped to pioneer a new model of entrepreneurship that has upturned the tech establishment: the lean start-up. (Helft, 2011)

Like the Martha Payne story, this one highlights Internet-empowered student accomplishments that stand on their own merits—without the need for proxy assessments. Moreover, these accomplishments are directly related to the learning outcomes of the course. Not every student will declare financial independence based on a single college class, but there are more modest ways of showing achievement. Such an approach can create a record to be used by the graduate as proof of his or her abilities, while the institution can collect and use these records for its own assessment. What must be overcome, however, is the idea that student performance can or should be standardized.

Validity and Authenticity

In the context of educational measurement, validity theory wrestles with the problem of connecting assessments, like test results, to some presumed real outcome. For example, one is entitled to wonder how much the multiple-choice test at the Department of Motor Vehicles predicts success in the

We propose a new standard: student accomplishment should be obvious to stakeholders.

actual operation of automobiles. In cases where there is a trusted criterion, this evaluation of the test is relatively straightforward. In a paper at the annual meeting of the American Educational Research Association in 2001, Michael Kane gave an historical overview of the field, noting that criterion-based validity was the starting point. He cites Cureton:

A more direct method of investigation which is always to be preferred wherever feasible, is to give the test to a representative sample of the group with whom it is to be used, observe and score performance of the actual members of the sample, and see how well the test performances agree with the task performances. (1950, p. 623)

This presupposes that testing is more practical than actually observing the criterion (which would obviate the need for the test). Even when a criterion is available, however, Kane points out a philosophical conundrum:

The criterion model does not provide a good basis for validating the criterion. Even if some second criterion can be identified as a basis for validating the initial criterion, we clearly face either infinite regress or circularity in comparing the test to criterion A, and criterion A to criterion B, etc. (Kane, 2000, p. 4)

A way out of this spiral is to identify a criterion for achievement that is obviously valid to stakeholders. This solution is analogous to the use of axioms in mathematics, comprising an agreed-upon foundation upon which to build. In the current discussion, these criteria would be those achievements that pass the test of public credibility. This reasoning inverts the CHEA criterion: instead of convincing the public that our tests are valid, begin by discovering what these stakeholders *believe* to be important outcomes of higher education. Those outcomes are likely to be messy, and it may mean giving up some rigor and reliability, but this is anticipated in *Assessment Essentials* (1999), a practical guide to outcomes assessment:

An . . . issue related to the reliability of performance-based assessment deals with the trade-off between reliability and validity. As the performance task increases in complexity and authenticity, which serves to increase validity, the lack of standardization serves to decrease reliability. (Palomba & Banta, p. 89)

Focusing on the unique achievements of a single student weakens most of the statistical apparatus used for technical validity arguments. Instead we have outcomes that are axiomatically valid in the sense of public credibility. Following Palomba and Banta, we will call this kind of evidence of student achievement *authentic*.

Note that this is not a critique of established methods of assessing learning. Rather, we propose an approach that is complementary to these. The recent direction of validity theory encompasses a somewhat controversial idea of *consequential validity*: “Validators have an obligation to review whether a practice has appropriate consequences for individuals and institutions, and especially to argue against adverse consequences” (Cronbach 1988, p. 6).

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Failing to meet the test of public credibility is an adverse consequence, with effects that are readily seen in the popular media: the erosion of trust in college degrees and demands for accountability. It is reasonable to sacrifice some rigor and reliability in order to gain understandability, to which we can add utility.

Authentic Achievement

We listed time to graduation, cost and debt, and employment as achievements that are credible to the public. There are, however, other kinds of authentic accomplishment, such as public performances in the arts, student internships, service activities, and success in graduate studies. As we expand the idea of what constitutes authentic achievement, it will be useful to keep two characteristics in mind.

The first is that the achievement is scalable in significance. A student who successfully places a single work of art in a local gallery exhibition has had a modest success compared to a student who lands a one-person show at a prominent gallery in New York City. Second, in any test of public credibility, the composition of *the public* needs to be matched to the achievement in question. For example, employers comprise many diverse audiences that will value different achievements.

The field of software development makes a good case study for authentic achievement: many audiences exist, and there are many opportunities for small and large achievements. A motivated learner does not need a college course to learn computer programming. At least three of the biggest success stories in software (Apple, Microsoft, and Facebook) started with autodidacts who became entrepreneurs. As the case we cited earlier—the Stanford course on Facebook apps—illustrates, similar opportunities still exist. Scalable authentic accomplishment includes:

- *Participation in a community of practice, such as the one found at StackOverflow.com.* This social network allows users to ask and answer questions publicly, vote on the value of these same contributions, earn badges for participation, and accumulate *reputation points* on a user profile. The accumulation of this shared knowledge and experience is available as a searchable archive of solutions to programming problems. These range greatly in scope and complexity and allow for a commensurate range of expression of skill and devotion to the service of others.
- *Collaboration on joint open source programming projects.* The theory and practice of an *open source* implies that code is shared and generally built through collaboration of many contributors. Many important projects are open source, including operating systems (Linux), databases (MySQL), programming languages (Perl, PHP, Python, Ruby, R), scientific computation (Weka, RapidMiner, NumPy), data visualization (D3), and web browsers (Chrome, Mozilla), just to mention a few. Anyone can create a new project or attempt to contribute to an existing one. The acceptance of this help is contingent on its quality. Many reputations are made through open source collaborations.

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- *Commercial software or services.* A single programmer or a small team of them can create commercially viable software. One of the co-creators of Skype, long before he was graced with honors from *Time Magazine*, was a high-school dropout with an interest in computers. Another telephony product, Asterisk, was created by a college student who could not afford the existing commercial solutions for his new business, so he built one from scratch (Hardy, 2006). Innumerable other applications were and continue to be developed this way.

The items above illustrate a range of interactions with obvious value and with varying audiences. To the general public, a high reputation score in [Stackoverflow.com](https://stackoverflow.com) or participation in open source projects may not mean much, but it will to an employer in the field. Underlying the importance of authentic achievement in this field, a spokesperson from Google has publicly stated that grades and degrees do not predict success at the company. This sentiment was summarized by Thomas Friedman (2014): “Beware. Your degree is not a proxy for your ability to do any job. The world only cares about—and pays off on—what you can do with what you know (and it doesn’t care how you learned it)” (2014). In this case at least, a diploma alone does not pass the test of public credibility.

The StackOverflow.com model, as well as the open-source idea, found success in areas other than software design. For example, the site [MathOverflow.org](https://mathoverflow.org) is a well-established professional social network for research mathematicians, and is finding success as an analog to open-source projects and crowd-sourcing mathematics problems (Ball, 2014). An index of the dozens of similar sites can be found at stackexchange.com/sites. Other forms of professional social networking are available at [Arxiv.org](https://arxiv.org), [LinkedIn.com](https://www.linkedin.com), [Academia.edu](https://www.academia.edu), and [ResearchGate.net](https://www.researchgate.net), where one may build a reputation, find collaborators, and stay current with research in an academic field.

Cultivating student work that has extrinsic value serves multiple purposes. It is engaging pedagogy; it produces evidence that satisfies the demand for public credibility; and it sets students on a path of professional development. The importance of this last point is underscored by one of the cofounders of LinkedIn.com in *The Startup Of You*. The authors argue that a narrow focus on a first job shortchanges our graduates, who are likely to switch jobs or even careers over a lifetime. The skill of engaging with professional groups outside one’s current place of employment is essential:

There used to be a long-term pact between employee and employer that guaranteed lifetime employment in exchanges for lifelong loyalty; this pact has been replaced by a performance-based, short-term contract that’s perpetually up for renewal by both sides. Professional loyalty now flows “horizontally” to and from your network rather than “vertically” to your boss . . . (Hoffman & Casnocha, 2012, p. 6).

Such life-long learning as continual engagement with a wide professional audience should not wait to begin until after graduation. Our students should immediately begin to grow roots into their chosen fields, make

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fruitful contacts through professional social networks and other means, and build their portfolios of achievement. If colleges embrace this idea, it also opens up the possibility of continued engagement between the graduate and the institution as literally a life-long resource, which could represent new sources of revenue generation and accomplishment of mission.

The Supply and Demand of Credibility

There is an evident demand for demonstration of authentic achievement. Sites like [VisualCV.com](#) cater to what is being termed *Resume 2.0*, which is described by [Social-Hire.com](#) as answering questions about job candidates like:

I'm interested in actions you've taken to produce results which are in line with your opinions. For example, do you believe that climate change is real? Great - and do you have a blog which educates people why? And how big is your following? (Kotov, 2013)

Higher education is ideally suited to produce such outcomes, but has not yet caught up to this demand. Meanwhile, services continue to emerge to search for and summarize authentic outcomes. For example, the site [Predikt.co](#) promises employers to:

IDENTIFY TOP CANDIDATES.
EFFORTLESSLY!
Shortlist the most qualified candidates in minutes.

What differentiates this service from traditional analogs is that everything is automated, starting with an Internet scan for a candidate's profile. The process is described on the company website:

Our proprietary algorithms learn from patterns, infer implicit skill sets and analyze multiple signals to scientifically determine the Predikt Score. The Score is evaluated based on a job description you create and real industry data we gather by analyzing thousands of other profiles.

[Predikt.co](#) also asserts that "Our artificial intelligence technology thinks the way you do, just does it much faster." The assertion "thinks the way you do" is the connection back to the test of public credibility. The algorithm is advertised to value the same qualities as the hiring company. The "multiple signals" referred to in the first paragraph are gathered from the Internet—whatever information can be gleaned about a candidate from social media, Resume 2.0, and other online sources.

[Predikt.co](#) is not the first or only automated rating system being advertised to potential employers. [Klout.com](#) and [Kred.com](#) are two services that infer a job candidate's worth by analyzing social network activity, including LinkedIn, Twitter, and Facebook posts to compute an index of public credibility. An article in *Wired Magazine* (Stevenson, 2012) describes how it works: "Much as Google's search engine attempts to rank the relevance of every web page, Klout—a three-year-old startup based in San Francisco—is on a mission to rank the influence of every person online."

There is an evidence demand for demonstration of authentic achievement. Higher education is ideally suited to produce such outcomes, but has not yet caught up to this demand.

It is impossible to know the validity of these advertised services. They are still assessment instruments, despite the new technological clothing, and the fashionable field of big data is not immune from the validity problems we discussed earlier. A senior research scientist at Google describes the situation in much the same way:

The first problem is that current [machine learning] methods still require considerable human expertise in devising appropriate features and models. The second problem is that the output of current methods, while accurate, is often hard to understand, which makes it hard to trust. (Cambridge, 2014)

Whatever their actual merits at present, these web-based assessments signal a demand for tests of public credibility that are based on transparent evidence of achievement.

The Educational Value of Authentic Achievement

In “Self-Realization as the Moral Ideal,” John Dewey wrote “if I were asked to name the most needed of all reforms in the spirit of education, I should say: ‘Cease conceiving of education as mere preparation for later life, and make it the full meaning of the present life’” (Dewey, 1971; Early Works 4:50). More recently, in 2009, R. M. Freeland called for a revolution in liberal arts education:

The longstanding notion that learning should occur almost exclusively in classrooms is being amended to give a much more prominent place to various forms of experiential education. The belief that liberal education should focus on a narrow range of intellectual qualities is being revised to include an emphasis on connecting ideas with action. These developments constitute a profoundly important, indeed revolutionary, challenge to the version of liberal education that has dominated American higher education since the early years of the twentieth century. (Freeland, 2009, p. 6)

Concurrently, others demonstrated through research that more active types of teaching and learning have higher impact than traditional lectures, tests, and papers. The term *engagement* is used to indicate a deeper level of student involvement with the learning experience, and it is this engagement that is attributed with producing the learning gains (Carini, Kuh, & Klein, 2004; Bowen, 2005).

We focus here on engagement of a particular type:

- Activities are motivated by some real-world concern;
- Students engage an audience external to the classroom.

Whatever their actual merits at present, these web-based assessments signal a demand for tests of public credibility that are based on transparent evidence of achievement.

Certain established high-impact practices already fall into this category, such as student internships, research projects, performances, and gallery exhibitions. This type of engagement has easily recognizable characteristics, but still leaves room for many kinds of implementation. The work itself is amenable to current practices of formative assessment, including rubric-based ratings that are linked to particular learning outcomes. For research on portfolio assessment, see Banta (2003).

Having a Resume 2.0 portfolio of documented achievement is obviously good for a graduate. A humanities graduate who can use her portfolio to showcase her critical and analytical thinking and communication skills demonstrates the qualifications employers claim to be most relevant to success in the business environment (AAC&U, 2013).

Producing Authentic Achievement

The challenge in introducing new pedagogy is changing faculty attitudes and habits. Viewed as a top-down project, this is difficult at best. Fortunately, our experience has been that faculty members quickly understand the benefits, and a grass roots change is feasible. However, institutional support is important, for example, by:

- Providing release time for faculty to develop assignments
- Providing technology support for faculty and students to learn to use new media production tools
- Making use of career services to support the documenting of student accomplishment
- Cooperating with the library to locate and engage external audiences and curate student work
- Cooperating with Admissions to tell success stories in order to attract new students
- Advocating for the project internally and externally

We have developed a guide for the creation and assessment of externally-facing student work to assist in the creation of new assignments. The methods below are intended to be in rough order of consideration when constructing an assignment. Each of the following matches a method to either the cognitive or non-cognitive domain and an assessment method. The connectivity icon indicates a level of engagement that culminates with demonstrable achievement.



Internal Engagement

Method: Customize assignments to student interests

Domain: Non-cognitive

Outcome: Higher level of student engagement because they are intrinsically

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motivated and will consequently work harder, be happier, and produce higher-quality work.

Assessment: Student self-assessment of motivation via Likert scale prompt or reflective writing.

There is often the opportunity to find an intersection between the course material and a student's own interests. Motivation is important to engagement and can be assessed independently from other outcomes.



Identify and Engage an External Audience

Method: Identify an appropriate audience

Domain: Skill development

Outcome: Students will find a variety of potential audiences that intersect with the topic, and choose one that fits the level of engagement and academic character of the project.

Assessment: A student's written or oral description of the audience and its relationship to the topic can be directly evaluated for appropriateness by the instructor or librarian.

Students are not only content consumers but also producers. Information literacy needs to be expanded to include how to locate and engage with an audience to which the content of a project is tailored. The audience could range from a single person to the whole Internet. Regardless, it is important that the assignment be matched to the audience. In some instances, the student may wish to develop a new online community around a particular topic. Here, then, the emphasis would shift from locating existing communities to ascertaining the need for a new community and the viability of introducing one.

Librarians can play an important role in teaching students how to identify an appropriate audience. A recent review of information literacy standards by the Association of College and Research Libraries contains this thread most noticeably in the "Information has Value" frame (ACRL, 2014). Faculty members can help students connect to professional communities.



Method: Evaluate audience-specific conventions

Domain: Knowledge acquisition, critical thinking, ethical reasoning

Outcome: Students will understand the conventions of an audience: acceptable behavior, style, format, media, and any technical requirements

Assessment: Instructors can use a suitable checklist to frame the student's discovery of audience requirements and as a prompt for assessment.

Students will need to evaluate the ethical standards of the audience (including copyright or other sharing agreements and use of anonymity), the range and level of discourse, and expectations of the audience regarding the formality, quality, appropriateness, and design of contributed content. Additionally, communities have their own styles of communication. In some cases there may be technical skills to learn, for example to produce graphics, video, or special typesetting.

Students are not only content consumers but also producers.



Method: Engage an external audience

Domains: Skill development, practicing ethical behavior

Outcome: Students will interact successfully with an external audience on a meaningful topic.

Assessment: (learning) Rating of intensity of interactivity by instructor using a social network interaction scale, rating of quality of this interaction for appropriateness, (ethics) student reflection on service to a community.

A social interaction scale might range from (1) mere observation of an external audience, (2) establishing individual connections with members, (3) entering into wider engagement with an online or offline community, or (4) collaborating on a project, contributing original content, or to critiquing and responding to critique. More advanced levels can include moderation (administering content) or the creation of a new online community. Getting an op-ed published in the local newspaper is an instance of (3) above.



Creation of Audience-Specific Content

Method: Produce original content

Domains: Development of technical skills, practicing higher-order cognition

Outcome: Students will contribute new content to the world that has some value and is presented in an acceptable way. The work reflects well on the student and on the institution.

Assessment: Rubric-based score of presentation, including choice and quality of medium, and Bloom's Taxonomy. Many traditional assessments are designed for a particular kind of content and can be used here.

Producing original thoughts or artistic works is an important goal of education. New and interesting content also drives much Internet activity, and publicly-viewable student contributions can be used as evidence of accomplishment. It is trivially easy to take existing course work and post it to the Internet, but does not achieve the goal here unless it demonstrates accomplishment that is credible to the external audience.



Content Curation

Method: Curate content

Domains: Skill development

Outcome: Students will demonstrate good use of meta-data and other means of establishing connectivity between their own identity and their work.

Assessment: Direct assessment of how easy it is to locate student work, or student work of a particular type using search engines.

In order to be most effective, good content should be connected to the world's public knowledge base so that it is findable and easily referenced. This consists of assigning meta-data in the form of subject identifiers, hyperlinks to related information, and backlinks from other sites; it might also include publication in secondary media such as Twitter, LinkedIn, or ResearchGate.

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It also involves consideration of proper titles and prominence of authorship and institutional affiliation. Placement in a recognized publication is a traditional means of content curation. Some consideration must be paid to the unique identification of the author, for example using orcid.org.



Method: Build an online professional portfolio (or Resume 2.0, as we are calling it).

Domains: Skill development, higher-order cognition

Outcome: Students will create an online representation of themselves that links to their best authentic work in a way suitable for a particular audience (e.g. potential clients, customers, employers).

Assessment: Rubric-based rating of portfolio based on clear identification of audience.

Ultimately, a student's portfolio is the accumulation of everything linked to his or her identity. However, this can be controlled to some extent. Like an old-fashioned resume, an online portfolio should be designed with the audience and goal in mind. Students can build a personal brand by providing easy links to their work and engagement, which may be scattered all over the Internet. Developing this portfolio can be a collaborative effort between the student, a faculty mentor, and Career Services. The student should have full control over the portfolio content.

Institutional Assessment and Use of Data

Aggregate measures of achievement in higher education typically include things like employment rates and continuation of study for graduates, licensure pass rates for professionals, and alumni giving. These traditional measures are being augmented by third parties that evaluate the online presence of an institution as a whole. For example, klout.com rates social media impact (Berry, 2011). More meaningful assessments of the accomplishments of current and former students are possible if their work is findable online. This is additional motivation for the curation of student work and creation of a professional portfolio while students are still enrolled, and taking a long view toward this valuable meta-data. Its importance to an institution will accumulate and grow over time.

College Admissions

One of the inefficiencies of many colleges is the inflexibility of staffing: the institutions cannot usually lay off the part of the professoriate that is overstaffed. One solution is to better control the demand per program by recruiting students not just generically to the institution but to the programs individually. Creating documented impactful experiences for enrolled students gives prospective students specific outcomes to compare to other institutions. The narratives of current students and graduates, as evidence by their growing professional portfolios of authentic work, support the value proposition.

Life-long Learning

Institutional missions often include a statement about life-long learning. One way to implement that is to provide services to graduates that help them assess and grow their professional portfolios of authentic work. In

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2011, a third of undergraduates were twenty-five years old or older (NCES, 2014), and ongoing career maintenance is likely to be particularly attractive to these non-traditional students.

Higher education is more naturally suited to a role of life-long development than the corporate paternalism of a prior age. Distance-learning technology enables services to be offered without a pause after graduation, and the continued relationship is mutually beneficial. Graduates gain from connection to a network of alumni and the professional networks of faculty as well as a continuation of educational opportunities and services.

Public Credibility

The institution benefits by being able to track in detail the success of its graduates. It is currently difficult for colleges to meet the test of public credibility, as evidenced by the largely negative discourse about higher education in popular media. Maintaining good archives of information about the authentic accomplishments of students and graduates allows an institution to tell the story of its success in infinitely customizable ways.

Conclusion

Colleges and universities are right to resist the pressure to automate teaching so that education becomes a factory-like process. But standing still is also not an option. We argue that the same technology that enables large-scale automation and standardization also empowers students to interact with the world, not just as consumers of content, but producers of it.

The convergence of artificial intelligence with the transparency of online information about job candidates has already begun to fill the void left by the informational sparseness of traditional credentials like resumes, diplomas, and transcripts. This capability will become more sophisticated and customized to individual searches, and those who have no activity to show will be invisible.

By making visible accomplishment one of the goals of education, we have the opportunity to turn the national conversation about the value of higher education away from automated delivery and testing to an authentic and transparent approach that is more meaningful, more natural, and ultimately more beneficial to students, programs, and institutions.

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NILOA Mission

NILOA's primary objective is to discover and disseminate ways that academic programs and institutions can productively use assessment data internally to inform and strengthen undergraduate education, and externally to communicate with policy makers, families and other stakeholders.

NILOA Occasional Paper Series

NILOA Occasional Papers are commissioned to examine contemporary issues that will inform the academic community of the current state-of-the art of assessing learning outcomes in American higher education. The authors are asked to write for a general audience in order to provide comprehensive, accurate information about how institutions and other organizations can become more proficient at assessing and reporting student learning outcomes for the purposes of improving student learning and responsibly fulfilling expectations for transparency and accountability to policy makers and other external audiences.

Comments and questions about this paper should be sent to njankow2@illinois.edu.

About NILOA

- The National Institute for Learning Outcomes Assessment (NILOA) was established in December 2008.
- NILOA is co-located at the University of Illinois and Indiana University.
- The NILOA website contains free assessment resources and can be found at <http://www.learningoutcomesassessment.org/>.
- The NILOA research team has scanned institutional websites, surveyed chief academic officers, and commissioned a series of occasional papers.
- One of the co-principal NILOA investigators, George Kuh, founded the National Survey for Student Engagement (NSSE).
- The other co-principal investigator for NILOA, Stanley Ikenberry, was president of the University of Illinois from 1979 to 1995 and of the American Council of Education from 1996 to 2001.

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