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Aligning Educational Outcomes and Practices

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NILOA Mission

The National Institute for Learning Outcomes Assessment's (NILOA) primary objective is to discover and disseminate the 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.

Abstract

The notion of alignment has become increasingly prominent in efforts to improve student learning today. The term, as used in this paper, refers to the linking of intended student learning outcomes with the processes and practices needed to foster those outcomes. Alignment is not a new idea, but it has become more salient as increasing numbers of campuses have devised institution-level learning outcomes, and as frameworks such as the Association of American Colleges and Universities' (AAC&U) Essential Learning Outcomes (ELOs), Lumina Foundation's Degree Qualifications Profile (DQP), and Tuning USA have become widely known and adopted. It has also become more important as students swirl through multiple institutions, stop out and return, and take advantage of the growing set of providers offering courses, badges, and certificates. Seen from this perspective, alignment is a much-needed counter to fragmentation and incoherence.

But achieving alignment isn't easy. In 2013 only four in ten institutions reported that the learning goals of all of their academic programs were aligned with the institution's stated learning outcomes. Drawing on work by the National Institute for Learning Outcomes Assessment (NILOA), this paper explores what campuses can do to facilitate this process in a way that makes a difference in the experience and achievements of learners. Specifically it reviews the use of curricular mapping as one prominent approach to achieving alignment; explores another approach that emerges more directly from the interests and work of faculty; proposes a number of implications for approaching the work of alignment; and concludes with an examination of the roles that students can play in our thinking about alignment. The aim of the paper is to begin to "crack open" this topic in ways that recognize its multiple levels, full range of contributors, and complexity.

Aligning Educational Outcomes and Practices

Pat Hutchings

Introduction

In 2009, members of the history department at Utah State University (USU) began a conversation that would lead them on an unexpected but consequential journey that continues today. The context of that conversation was Tuning USA, a national initiative modeled on Europe's Bologna process, designed to identify "points of reference, convergence, and common understanding" about student learning outcomes in different areas of study (quoted by McInerney, 2015, p. 31).

Faculty were deeply skeptical at first, troubled that the project turned attention away from a pressing budgetary crisis raised by the Great Recession, worried that the process might lead to unwanted scrutiny of their program's effectiveness, and concerned that Tuning would require a time-consuming effort yielding few meaningful returns. But over time, concerns about how the process might go wrong helped shape it in positive ways—ways that were not about external reporting and accountability but about faculty's real interest in improving the character and quality of their students' understanding of the discipline. The result was a gradually emergent and increasingly robust conversation about what history students should know and be able to do.

Particularly powerful in shaping that conversation was the realization that many department faculty were dissatisfied with student performance in the program's capstone course, which required an original contribution to research in the field. But why, exactly, was that so difficult, colleagues asked one another? What were students doing—or not doing—in earlier courses that would prepare them for such work? What did they need to do in order to be *better* prepared?

Over time, the result of these deliberations was a significant rethinking and reshaping of the program, starting with the introductory course, rippling through other courses along the way, and leading eventually to a new "pre-major" model (also adopted by other USU departments) that linked program goals with broader general education offerings and outcomes. Today USU history students move through an intentional sequence of courses in which they encounter assignments designed to foster and document the outcomes that define achievement in the discipline and in broader areas of liberal learning.

Meanwhile, seeking to understand the impact and effectiveness of the new model, faculty have explored a variety of instruments and approaches designed to document the learning students achieve—including rubrics employed at several levels, course evaluations that ask students to engage in self-assessment, more meaningful exit surveys, and assignments more

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closely tied to learning outcomes. Evidence gathered in these ways can help to affirm the value of changes that are now in place and may also point the way to further refinements in the future.

This story, as recounted by USU history professor Daniel McInerney (2015), is a powerful illustration of what can be accomplished when a program seriously engages in the Tuning process. It is a reminder, too, of the twists and turns of pedagogical and curricular reform; change requires patience and tenacity; it moves slowly and takes small steps. Additionally, and for the purposes of this paper, the experience recounted by McInerney is a window on the notion of ***alignment*** that has become increasingly prominent in serious efforts to improve student learning today.

Context

"Alignment," as used in this paper, refers to the linking of intended student learning outcomes with the processes and practices needed to foster those outcomes. In the case of the USU history department, these include curriculum and course design, the assignments students are required to complete, and the instructional approaches employed by faculty. But alignment is also about connecting outcomes more clearly to the character of co-curricular opportunities, and to the policies that govern transfer and other aspects of students' movement through the higher education system.

Alignment refers to the linking of intended student learning outcomes with the processes and practices needed to foster those outcomes.

Alignment is not a new idea, but it has become more salient as increasing numbers of campuses—84 percent as of 2013—have devised institution-level learning outcomes (Kuh, Jankowski, Ikenberry, & Kinsey, 2014), and as frameworks such as the Association of American Colleges and Universities' (AAC&U) Essential Learning Outcomes (ELOs), Lumina Foundation's Degree Qualifications Profile (DQP), and Tuning USA have become widely known and adopted. Individual academic programs are also in the business of identifying common outcomes, and many of them are now required to post those publicly on websites or in syllabi. A number of disciplinary and professional societies have developed common outcomes as well, including the American Historical Association (2015)—USU's history department was part of this work—and the National Communication Association (2015). Whatever the level or framework, the idea is to get everyone rowing in the same direction—with course, program, institutional, and even national-level outcomes aligned in ways that create more intentional pathways to student learning and success.

Not only has attention to alignment become more prominent, it has also become more *important* as today's students swirl through multiple institutions, stop out and return, and take advantage of the growing set of providers offering courses, badges, and certificates. Seen from this perspective, alignment is a much-needed counter to fragmentation and incoherence.

But achieving it isn't easy. Devising a set of institution-wide outcomes that the campus embraces in common is difficult enough; stories abound of endless debates and battles about which outcomes matter most and how best to describe them. But the next step is even harder—bringing a full set of relevant practices to bear on the achievement of those outcomes. The

challenge, as George Kuh and Stanley Ikenberry (2013) remind us, is for institutions to move "from lofty, broad, and sometimes vague descriptions of student performance to demonstrable evidence that students [have] indeed become proficient" (p. 4). Accordingly, in 2013 only four in ten institutions reported that the learning goals of all of their academic programs were aligned with the institution's stated learning outcomes (Kuh, et al., 2014). So it is worth asking: What does alignment look like when it is done well? What, especially, does it look like in the work and practice of faculty and others who interact with students on a regular basis? And what can campuses do to facilitate this process in a way that makes a difference in the experience and achievements of learners?

What does alignment look like when it is done well? What, especially, does it look like in the work and practice of faculty and others who interact with students on a regular basis?

These and related questions are on my mind as my colleagues and I at the National Institute for Learning Outcomes Assessment (NILOA) strive to discover and understand how to ensure that students receive the kind of education they need to flourish today and into the future. More specifically, they arise from our work over the last several years supporting campuses that engage with the DQP. In what follows, then, I look at curricular mapping as one especially prominent approach to achieving alignment; explore another approach that emerges more directly from the interests and work of faculty; propose a number of implications for approaching the work of alignment; and conclude with an examination of the roles that students can (and must) play in our thinking about alignment. The aim of the paper is to begin to "crack open" this topic in ways that recognize its multiple levels, full range of contributors, and complexity.

Alignment through Curricular Mapping

Many campuses have addressed the alignment challenge through curricular mapping. As Peter Ewell (2013) describes it, the process is relatively simple, beginning with the creation of "a two-dimensional matrix that represents individual courses on one dimension and competencies on the other" (p. 9). Entries within each of the cells can include whether or not the proficiency (i.e., the desired outcome) is taught in the course; the level of proficiency required; whether the outcome is directly assessed; and other issues.

This kind of process has become increasingly common. A staple of accreditation self-studies, curricular mapping is most frequently employed around general education outcomes (Allen, 2006; Driscoll & Wood, 2007), but many disciplinary and professional programs have also created curricular maps, explicitly identifying their expectations for student learning and linking those expectations with institution-level or general education outcomes. Mapping may also focus on outcomes outside of the academic program, as was true at Indiana University-Purdue University Indianapolis where student life outcomes were mapped against the institution's Principles of Undergraduate Learning (Aaron, 2015).

Mapping has emerged as a prominent activity among campuses exploring the DQP. At Kansas City Kansas Community College, for instance, all programs and courses mapped their intended outcomes against the five DQP proficiencies, an exercise that then became the basis for a comprehensive assessment system drawing on evidence from classroom assignments

(Hutchings, 2014 July). Westminster College and Nebraska Methodist College have used curricular mapping to determine the overlap between their own student learning outcomes and DQP proficiencies in order to improve course coverage of each domain (Ewell, 2013). At Oregon Institute of Technology, a faculty-led task force used the DQP as a framework for curricular review and then engaged the whole faculty in mapping every program's curriculum to newly proposed institutional student learning outcomes; this process then led to another round of mapping focused on revised general education outcomes (Bailey, 2015; personal communication, S. Bailey, November 18, 2015).

There are variations on this process as well. Some institutions—Brandman University, for instance—have used mapping to explore the relationship between DQP proficiencies, the Essential Learning Outcomes from AAC&U, and their own (sometimes emergent) institutional outcomes. Taking this exercise a step further, McKendree University aligned all three of these frameworks with one another but also to National Collegiate Athletic Association "key attributes" (Eggleston & Bahr, 2014). Others have focused mapping efforts on a particular outcome or proficiency highly valued in their context and culture. For instance, San Jose State University employed a technique called "institutional effort mapping" to determine and coordinate campus activities promoting diversity both within and beyond the curriculum (Halualani, Haiker, & Lancaster, 2010; Ewell, 2013). Indiana University-Purdue University Indianapolis and Ivy Tech Community College have worked together using Dynamic Criteria Mapping (Broad, 2003) to move from samples of student work to detailed evaluation criteria (Schuck & Wininger, 2014). Jankowski and Marshall (2014) provide a useful tour of diverse curricular mapping efforts as part of their "roadmap" to the DQP and its disciplinary counterpart, Tuning.

Not surprisingly, technology is increasingly playing a role in such efforts. A number of tools are available through commercial vendors. For instance, LiveText's Assessment Insight System, launched in late 2015, is designed to map program-level outcomes and can link to samples of student work; Blackboard's "Outcomes" tool makes it possible to map connections across courses and levels. But some institutions are designing their own mapping technologies. The University of Saskatchewan developed an open-access online mapping tool to capture instructors' perceptions of their courses' instructional methods, assessments, and course learning outcomes in relation to program outcomes. (See http://www.usask.ca/gmcte/services/curriculumdevelopment/CAT for a brief description, video clips, and information on how to access the open-source software.) Prince George's Community College has developed the "All-in-One" system to link outcomes from the classroom to the program and institutional level (Richman & Ariovich, 2013).

Done well, the mapping approach to alignment is systematic and comprehensive. Built on (or, as in the case of Dynamic Criteria Mapping, generating) widely shared and endorsed institutional or program outcomes, mapping yields a valuable big-picture view of which outcomes are being taught for and assessed—and which have somehow fallen between the cracks. The fact that mapping is now a widespread practice speaks to its usefulness and power.

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That said, curricular mapping is a first step toward alignment (Ewell, 2013) but it is not enough. On its own, as an isolated exercise, mapping is not likely to change faculty practice in the classroom. Indeed, some faculty may find the process mechanical and constricting, and it can sometimes seem top down. Nor is it something that students are likely to see or find helpful in understanding the connections between their diverse educational experiences and how one course is intended to lead to another in ways that "add up."

In short, in a dictum made famous by general semantics scholar Alfred Korzybski (1931), "The map is not the territory." The reality of alignment is more complicated than any curricular map can capture, and it is useful, then, to consider how (as in the USU history department) more coherent, scaffolded experiences are being built through and into the design of the learning experience—the assignments and teaching approaches—that faculty create and that students actually encounter in their courses.

The Faculty Eye View

A different approach to alignment, one that is more bottom up and inductive, has emerged through NILOA's work in support of campus engagement with the DQP. Early on, a number of campuses began developing assignments designed to teach for and document learning around the five DQP proficiencies. To build on these efforts, NILOA turned to the field and invited faculty to work together, across disciplines and campuses, to develop assignments that support DQP outcomes for inclusion in an online "library" of assignments where colleagues can read, comment on, adapt, and use them (www.assignmentlibrary.org). This initiative has been a window into the experience of alignment from a faculty point of view.

One thing we have learned thus far is that for many faculty the value of alignment—though they may not use this word—comes most powerfully into view when they begin sharing assignments with one another and talking about what they see. In the NILOA assignment-design events (called "charrettes," a term borrowed from architecture education to denote a collaborative design process), a powerful condition for thinking about and taking up the alignment challenge has been participation in a conversation with peers in which people are asking the apparently simple question, "What outcomes does this assignment aim to assess?" In truth, faculty may have many things in mind when they design an assignment: the need to give a grade, to find out whether students are doing the work, to engage them with content, to motivate. But the desired outcomes—the knowledge and skills the assignment is intended to elicit—may be inchoate or implicit, unclear to students and also, sometimes, to the faculty member her- or himself who has not yet fully articulated that connection.

In this context, an important lesson from NILOA's work with faculty on assignment design—evident also in AAC&U's Quality Collaboratives project (Jankowski, 2015) and in the Multi-State Collaborative (Berrett, 2015)—is that even otherwise powerful and engaging assignments can sometimes fall short in prompting students to demonstrate the intended learning. As one participant in a NILOA charrette put it, "We all have these things that we're subconsciously looking for when we grade assignments…. And then you get to poking around in your assignments and realize that nowhere in

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there do you ever really ask them to demonstrate those things." The process of peer collaboration and review can help surface and make explicit that connection (or disconnect). Indeed, more than half of respondents from the NILOA charrettes reported that talking with others about their assignment made them more aware of aligning assignments with "desired institutional outcomes."

NILOA's assignment-design work has brought faculty together across different campuses, but conversations are also occurring locally on campuses that are adapting the charrette process to their own needs and context (Hutchings. Jankowski, & Ewell, 2014). Within that campus context, where faculty are talking with others who teach the same students, a next set of questions can also come into play: How is my assignment related to your assignment? How does it build on a previous course and its assignments, and how does it prepare students for the work expected in future courses? How does any given assignment contribute to the student's ability to engage in advanced work that is integrative and applied in ways that pull together the student's learning over time and connects with ideas and issues she really cares about? In short, intentional campus conversations about assignment design can be a "breeding ground" (as one campus leader put it) for linked assignments and greater alignment.

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Developments in the Communication Studies Department at Washburn University illustrate this dynamic. In 2011, the program initiated a research-centered capstone required of all students. The faculty member charged with developing and teaching that course realized early on that students needed more extensive preparation to succeed with the capstone's required original scholarly research project. In response, she worked with colleagues (including through a survey of practice at the national level) to create what she calls a "bridge assignment" required in the junior-level methods course to provide a foundation for what follows (Reynard, 2014). The new assignment, which helps students develop academic research skills and also practice skills like time management, has fostered better alignment within the program and provided important supports for students, who now come into the time-critical capstone course with theory and method selected, foundational research completed, a hypothesis in mind, and ready to begin developing the paper (L. Reynard, personal communication, October 3, 2015).

As this example suggests, capstone projects and experiences are one of the places where alignment can manifest itself, and mapping efforts often point to the need for these kind of culminating, integrative offerings. But what really matters is what *happens* in these new settings—what specific and concrete tasks students are asked to undertake. This point is illustrated by the experience at Point Loma Nazarene University, where, as part of the institution's work with the DQP, departments and programs developed capstone courses and assignments (papers, presentations, and exams) that could be used to assess the effectiveness of both general education and the major (Hutchings, 2014 January). In the Mathematics, Computer Science, and Computer Information Systems Department, for instance, faculty worked together to design a two-part assignment that asks students to prepare an oral presentation and write a paper that integrates what they have learned from their course of study up to that point (Zack, 2014).

These examples underscore an important point. Alignment is not only about curriculum, assignments, and assessments. It is also about the teaching approaches and classroom activities that develop students' ability to achieve key outcomes. Indeed, more than a third of NILOA charrette participants reported that the experience caused them to make changes in their teaching. As one person put it, "The assignment [revised through the charrette] has led to the revision of the associated course so that the course design supports the learning outcomes and provides sufficient scaffolding that leads up to and builds toward the signature assignment." Another reported having "more conversations with colleagues about how our assignments might sync across the curriculum to ensure students will have learning experiences that lead to achievement of the program goals and outcomes."

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Accordingly, assignments in the NILOA Assignment Library are often accounts not only of a particular task, project, paper, or examination but of very particular classroom activities and supports that have been developed (often over time as the assignment has been tested and revised) to help students succeed. Thus, in the case of the Point Loma math and computer science program described above, the new capstone assignment comes with instructional activities and supports; students work with an advisor who provides guidance in preparing the paper and the oral presentation. Other pedagogical interventions and innovations highlighted by faculty whose work appears in the Assignment Library include the development and use of rubrics to help students understand exactly what is expected of them; careful step-by-step activities and protocols (e.g., the questions a philosophy student should use to analyze key texts) to guide students through difficult tasks; the provision of sequenced, iterative feedback through multiple drafts; the use of portfolios that pull together student work over time and across contexts; and reflective writing. When strategies like these are woven into course assignments, alignment emerges through an organic, bottom-up process where it meets with more overarching outcomes and helps both to achieve them and to define them more clearly. In short, outcomes that are often (and necessarily) at a high level of abstraction are animated and brought to life through assignments and associated classroom activities to scaffold those assignments.

Meeting in the Middle

It is too simple and potentially polarizing to say that alignment is either a top-down or bottom-up activity. Work in both directions is in evidence on many campuses, and the two approaches can clearly be mutually reinforcing—with an overarching conceptual framework (a top-down orientation) coupled to creative, critical refinement, improvement, and elaboration (a more bottom-up orientation). In this sense, mapping is an appropriate and useful metaphor for alignment, but so also is the image of conversation, which presents a different and complementary view—less linear, more organic and inductive, and closer to the daily work of faculty. A number of implications follow from this:

- Alignment is best understood as a multi-directional process. Activities like mapping that systematically represent and construct the relationship between shared outcomes and the educational practices that foster those outcomes at the course and program level are

critical. But what is also needed are conversations where individuals in a wide range of roles can explore the meaning of outcomes in their particular contexts. In this sense, outcomes shape practice but practice can also shape the character and understanding of outcomes (Adelman, 2015).

- Accordingly, the dynamics of alignment can go in both directions. Faculty who approach alignment initially in the context of their own courses may (especially as they trade ideas with colleagues looking at the design of assignments and classroom activities) become interested in exploring broader curricular connections and seek out ways to participate in mapping and related activities (like the assessment of student learning outcomes) that occur at the program and institutional levels. Conversely, an institutional mapping exercise may reveal gaps that stimulate faculty to reshape assignments and teaching practices to focus more sharply and explicitly on shared outcomes, both at the course and program levels. Some campuses are now developing or adopting technologies for systematically connecting the two approaches—aggregating up from classroom work to align with broad institutional outcomes.
- Top-down and bottom-up approaches to alignment can inform each other, but both can also be undertaken in ways that make that connection more likely. Jankowski and Marshall (2014) suggest, for instance, that curricular mapping should be a conversational activity, one in which faculty come together, engage one another, compare perspectives, and work toward consensus and shared understandings. It is possible, as well, to situate the mapping process (at least as a starting point) at the classroom level, for instance through dynamic criteria mapping (which was originally developed for use in composition classrooms) and as illustrated by the work of Driscoll and Wood (2007). In the same spirit, assignment design work can be done beyond the level of the individual classroom by *teams* of faculty teaching courses taken by the same students—a circumstance likely to catalyze attention to larger issues of curricular coherence and alignment.
- Alignment requires overarching planning and vision from the top, and resources to enact that vision. It means systematic mapping of outcomes as they relate to general education and program curricula, and leadership for that process at all levels of the institution. It means support for the assessment of student learning outcomes. But it also means creating and providing opportunities for conversation among faculty and others who work directly with students—such as student affairs staff and library personnel—in which they can talk to one another about what they do, why, and how, in ways that uncover new opportunities for stronger connections. Teaching centers, working in concert with assessment offices and committees, can support and facilitate such exchange. These activities need not be expensive, but they do not happen on their own, and it must be clear that the institution values such efforts.
- Language is critical in all of this work since shared vocabulary is part of what makes clearer, more shared commitment to outcomes

Alignment requires overarching planning and vision from the top, and resources to enact that vision.

visible—including to students. But in some settings the language of *alignment* may feel overly linear and even bureaucratic, and alternative language may be a better match with the campus culture. Indeed, many faculty are "uncomfortable with terms such as outcomes, metrics, and rubrics," which strike them as "foreign phrases" (D. McInerney, personal communication, November 1, 2015). Endless exercises in the definition of terms is not the answer here; what's needed, rather is ongoing conversation in the *lingua franca* of those around the table as they seek to understand one another and work toward a shared vision of the learning that matters most for their students. Developing and using rubrics (for instance AAC&U's VALUE Rubrics) has proven especially helpful in creating shared understandings and language for talking about learning (T. Rhodes, personal communication, November 20, 2015).

- Finally, alignment will be most consequential when all the right parties are at the table. Clearly faculty from multiple disciplines and fields—including adjuncts and graduate teaching assistants—are essential if broader outcomes are to be clearly in view. Those who work in student life can bring important perspectives to the conversation, as well, and administrative leaders are needed to help carry the conversation from one setting to another, keeping the bigger picture in view. But what is also needed is attention to the role that students play in constructing meaningful connections and alignment across the varied contexts of their educational experience.

Educators cannot make connections for students. To put it differently, alignment must happen in the student's head—and perhaps in the heart as well.

Students Making Connections

In her study of integrative learning, composition scholar Rebecca Nowacek (2011) argues that students must be "agents of integration." This phrase brings into view the critical role of students in achieving the kind of connected, integrative learning that the notion of alignment points to as so important. Clearly, it is the responsibility of educators—faculty, librarians, student life professionals, everyone who interacts with students—to create the pedagogical, curricular, and co-curricular supports and scaffolding that give students the greatest likelihood of achieving the kind of integrative understandings needed to address the complex, interdisciplinary, "unscripted problems" that characterize life in the 21st century (AAC&U, 2015). But research on learning over the past several decades has underlined a corollary recognition: that educators cannot make those connections *for* students. To put it differently, alignment must happen in the student's head—and perhaps in the heart as well.

The growing popularity of e-portfolios reflects—and addresses—this recognition. When structured to support reflection and meaning making, portfolios can be a powerful vehicle through which students make connections across settings, over time, and between the diverse dimensions of their lives and their academic studies. As a University of Michigan student wrote in her portfolio, "I have had many amazing experiences but I didn't really know what they meant or how they all fit together. Now I see patterns and themes" (quoted in Miller & Morgaine, 2009, p. 9).

But portfolios are likely to be even more powerful when they are supplemented and enriched with many other occasions for students to step back from their learning in ways that help them make connections and meaning—and to build habits of doing so (Hutchings, 2005). These may be quite simple—for instance the use of the one-minute paper, a classroom assessment technique that asks students at the end of a class session to write down what they take to be its most important point and a point they are less clear about (Angelo & Cross, 1993). This information is helpful for the faculty member in determining whether goals are being met and where further time and attention will be needed. But the one-minute paper, when it is something students are asked to do repeatedly and in different course settings, can also foster habits of metacognition and reflection that help students see the connections between what they learn in different courses and fields, between their academic learning and their lives beyond the institution, and between what they know and what they can do.

When students are asked to reflect repeatedly and in different course settings, it can also foster habits of metacognition that help students see the connections between what they learn in different courses and fields, between their academic learning and their lives beyond the institution, and between what they know and what they can do.

Habits of reflection and meaning making can also be built into assignment and course design in more ambitious ways. For instance, students beginning work in the School of Philanthropy at University Purdue-University Indianapolis are asked to create a "philanthropic autobiography," a short essay exploring their personal engagement with philanthropy and nonprofit organizations. The introductory assignment is an important part of their orientation to the field. But it is also part of a continuing narrative. Thus, students may consult their autobiography throughout their studies, but the program's capstone provides a formal occasion to revisit and revise it. The resulting document then becomes the basis for a digital story which becomes part of the student's e-portfolio, providing "evidence that they have demonstrated achievement of the B.A. program's learning outcomes and defined their professional identity as newly minted graduates preparing for the job market or graduate school" (Freeman, 2014).

It should be said that not every faculty member is going to be comfortable with such assignments or with other strategies designed to prompt students to "go meta" by reflecting on their learning and its meaning. And the discomfort can extend, as well, to students themselves, who are often not accustomed to being asked to make connections across courses or contexts, let alone to go public with values and experiences that they may perceive as outside the bounds of academic learning. Language matters: there is no single shared meaning of "reflection," and it can sound to some like navel gazing—too soft, too personal, and taking time away from "the real stuff" of disciplinary content and skills.

Even so, there are now signs of increasing openness to these kinds of integrative, metacognitive moves and moments. As noted earlier, e-portfolios are now a prominent feature on the higher education landscape, the focus of an extensive international network of educators whose research on their effectiveness suggests that guided reflection can help students "achieve expected learning outcomes and a sense of enhanced personal and professional effectiveness" (Rogers, 2001, p. 55), and that "the more the learner takes charge of the format and process, the deeper the learning" (Cambridge, 2010, p. 2). Whether in the context of portfolios or more generally, those interested in metacognition can turn to an online resource featuring the latest

research and practice on that topic (http://www.improvewithmetacognition.com/). "Student metacognitive skills" appears as one of ten principles for transformed departmental practice in a rubric developed by the Partnership for Life Sciences Education (PULSE) (http://www.pulsecommunity.org/page/stem-department-evaluation-rubric-and-goals). A recent volume on "Engaging Students as Partners in Learning and Teaching" examines the power of programs in the U.S. and beyond that give students a deeper understanding of the learning process (Cook-Sather, Bovill, & Felten, 2014). Similarly, the roles that students can play in studying learning and teaching—thereby understanding and strengthening their own capacity as learners—is the focus of one of the most active interest groups within the International Society for the Scholarship of Teaching and Learning (Werder & Otis, 2010). And the Consortium to Promote Reflection in Engineering Education has documented a wide range of practices underway on twelve participating campuses, including exam wrappers (prompts to help students reflect on their exam performance and improve their preparation for future exams), and a program at Stanford University to help students reflect on their failures in order to develop greater resilience as learners (http://cpree.uw.edu).

Alignment is not simply a function of what the faculty, program, or institution puts in place but of what students add to the mix by bringing their own experiences, interests, and passions to bear.

The point here is not that every course can or should become an occasion for students to reflect on their learning--though many of these strategies can usefully be woven into existing classroom activities and assignments. The point, rather, is that alignment is not simply a function of what the faculty, program, or institution puts in place but of what students add to the mix by bringing their own experiences, interests, and passions to bear. Institutional outcomes are a place to begin, an anchor for evolving work, but we want our students to go beyond that, as well, to make connections in a way that creates something new and novel (Mansilla, 2010; Rogers, 2001).

This aspiration is echoed in what AAC&U calls "signature work"—work that is integrative and applied and that reflects the particular interests and passions of the learner (Schneider, 2015). As such, signature work is aligned with intended outcomes, and the capacity to undertake it depends on how the various experiences and opportunities students encounter in their educational journey come together and line up. But signature work belongs to the student—it has her or his "signature"—and invites connections that go beyond what can be planned or engineered into the educational program. Such work is not narrowly or mechanically bound by a set of institutional learning outcomes but opens up in ways that reflect individual strengths and passions.

Seen in this way, alignment is not a steady state, or a task to be completed and set aside. It is an ongoing process that must be woven into the institutional culture—in the ways people talk with one another, the practice of faculty and students in the classroom, the design of assignments, and the policies and processes that guide curricular development and the assessment of student learning outcomes. It takes patience, persistence, leadership, and broad engagement. And above all, it takes a relentless focus on student learning.

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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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