Intersections of Writing, Reflection, and Integration

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Abstract: In fall 2010, the University of Massachusetts Amherst instituted a new upper-division General Education requirement, the Integrative Experience (IE), designed to help students integrate the various components of their undergraduate experience and reflect upon their learning and development as a result of those experiences, both key dimensions of High Impact Practices. In this article, we describe how writing played an important role in both 1) shaping formative assessment that informed program implementation and 2) facilitating integrative and reflective thinking through IE assignments. More generally, our assessment findings show the strong link of writing to distinguishing features of High Impact Practices and argue for broad, collaborative assessments that uncover such inter-connections. Our experience also underscores the wisdom of writing faculty being actively involved in general education program development and assessment, and taking the broad view of the role writing can play for learning.

In fall 2010, the University of Massachusetts Amherst instituted a new upper-division General Education (Gen Ed) requirement, the Integrative Experience, designed to enhance Gen Ed by helping students integrate the various components of their undergraduate experience and reflect upon their learning and development as a result of those experiences. To implement the requirement, each department was to develop an upper-division Integrative Experience (IE) course for its majors. Because the IE requirement bridges students' Gen Ed experiences and their experiences in their majors, and every department must develop curricula that build linkages between the objectives of Gen Ed and the major, it offers both opportunities and challenges for our campus. The new requirement offers the opportunity to engage a larger proportion of the campus community in understanding and contributing to the value of General Education. It also offers the chance to think intentionally about how to encourage integrative and reflective thinking. These opportunities are also the challenges for faculty and students alike: the focus on integration between Gen Ed and the major and imbedding reflection into the IE expectations represent new pedagogical and learning approaches for many.

While the role of writing was *not* a central consideration in developing our IE requirement—indeed "writing" is not even mentioned in the purpose statement or course criteria, findings from the assessment of early implementation show the centrality of writing for integrating one's learning across courses, applying learning to new situations, and reflecting on one's self as a learner. We also identified the value of writing faculty involvement in the implementation and assessment of this requirement and in General Education more broadly. In other words, these findings show the strong

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link of writing to distinguishing features of key High Impact Practices and also argue for broad, collaborative assessments that uncover such inter-connections.

Before presenting what we have learned, we provide a bit of context on the program design and implementation process. "We" in this case are a researcher in the University's Office of Academic Planning and Assessment and a WAC scholar in the University's English Department.

Program Design Grounded in Sound Curricular Design Principles

The IE requirement came out of the recommendations of a General Education Task Force (2007-2009) and was designed through a collaboration of faculty and administrators under the auspices of the General Education Council of the Faculty Senate. The IE is intended to work against students' tendencies to dismiss the Gen Ed requirements as "irrelevant" to what matters most to them and to approach their college learning in a bifurcated manner. Typically, undergraduates take their Gen Ed courses early in their college careers and often refer to these requirements as things to "get out of the way" or "check off" in order to move on to what really "matters," i.e., courses in their majors.

As a full third of the credits students take at UMass Amherst, the General Education program is intended to be more than a hoop to jump through. The Gen Ed learning goals reflect the "Essential Learning Outcomes" outlined by the Association for American Colleges and Universities (AAC&U) and affirmed as important by employers in various studies. Gen Ed's expressed purpose is to "stretch students' minds, broaden their experiences, and prepare them for: their college experiences and subsequent professional training, their careers and productive lives, community engagement and informed citizenship, a diverse and rapidly changing world, and a lifetime of learning" (See Gen Ed Learning Objectives). A tall order.

The Integrative Experience was intended to build departmental buy-in and to purposefully build bridges between Gen Ed and the major. Designed as an upper-division Gen Ed requirement offered in the major department, the IEs are developed by the major department following the criteria set up by the General Education Council, and reviewed and approved by the Council. The IE design criteria were informed by the current research on the curricular practices most effective in helping students learn and develop. As outlined in the IE course design and approval criteria, IE courses:

- Provide a structured, credited context for students to reflect on and to integrate their learning and experience from the broad exposure in their General Education courses and the focus in their major.
- Provide students with the opportunity to practice General Education learning objectives such as oral communication, collaboration, critical thinking and interdisciplinary perspective-taking, at a more advanced level.
- Offer students a shared learning experience for applying their prior learning to new situations, challenging questions, and real-world problems.

Through these criteria the IE contributes to the University's capacity to offer an undergraduate curriculum that follows curricular design principles that foster student learning (AAC&U, 2015; Diamond, 2008; Education Commission of the States, 1995; Huba & Freed, 2000; Mentkowski, 2000; Bransford, Brown, Cocking, & National Research Council, 2000; Pellegrino, Chudowsky, Glaser, & National Research Council, 2001). The relevant design elements include:

- *Curricular Coherence*: Learning expectations and experiences are scaffolded to lead students to increased levels of challenge and performance.
- *On-Going Practice of Core Skills*: Throughout the undergraduate program, students have multiple opportunities to learn and practice core academic skills.

- *Integration of Education and Experience*: Classroom learning is augmented and reinforced by multiple opportunities to apply and transfer what is learned.
- *Opportunities for Reflection*: Students are provided opportunities to reflect on what and how they have learned, helping them to create coherence in their experiences.
- *Synthesizing Experiences*: Students synthesize knowledge and skills learned in different places in the context of a single problem or setting through experiences such as capstones, independent studies, or research projects.
- *Learning in Community:* Collaborative work with peers and instructors is a prominent feature.

It is not surprising that these same curricular characteristics are threaded across the AAC&U's "High Impact Practices" (HIPs). The IE model itself fulfills two HIPs: "Common Intellectual Experiences" and "Capstone/Culminating Experience." In addition, the IE criteria are intentionally flexible, so departments can design IE approaches that are best suited to their students (some departments adapted existing courses while others designed new options for the requirement). Departmentally-designed IE's may also incorporate a number of other HIPs; specific examples from the IEs offered include collaborative learning, writing intensive, undergraduate research, diversity/global learning, service learning, and internships.

These design principles are further reinforced by the University's long-standing two part General Education writing requirement—first-year College Writing, and the Junior-Year Writing Program (JYWP). Together, they serve the broader General Education goal of developing skills of "communicating persuasively and effectively … in writing." College Writing, a multi-sectioned course with a common syllabus emphasizes general academic writing skills, with particular attention to "critical thinking and communication, consideration of plural perspectives, and self-reflection on one's learning" (See College Writing Course Goals). The Junior Year requirement is for a writing-intensive, upper level course offered by each major focusing on the writing of that field and taught by faculty in that field or, as need arises, adjuncts with relevant expertise. Since the JYWP is to focus on the writing of each discipline, a great deal of latitude is given to departments to shape their own course to link to the intellectual and rhetorical demands of their disciplines. Still all JYWs are required to "include multiple writing assignments that reflect writing valued in the discipline or profession; these assignments should total at least 20-25 pages of finished prose writing;" and "ask students to draft, give and receive feedback, and revise" (see JYW Course Expectations). In addition to these two writing courses, all Gen Ed "Social World" courses (e.g., Arts and Literature, History, Social Sciences) are to involve writing and critical thinking although this expectation is difficult to realize in some large, understaffed lecture courses.

Taken together, these requirements evidence the design principles of scaffolding, on-going practice of core skills, opportunities for reflection, and learning in community through peer work. Also, as will be discussed more later, the JYWP and the IE—each in its own way—are uniquely positioned to reinforce the core goals of reflection and integration in students' more advanced studies.

Implementation: Instructional Development and Formative Assessment

The IE requirement represents both a continuation of the curricular innovation evidenced in the JYWP and a new implementation that more consciously links the learning objectives of Gen Ed with the rest of the undergraduate curriculum (and, specifically, students' majors). Anticipating the complexities, both political and pedagogical, associated with this new requirement, the Gen Ed Council purposefully placed instructional development and the collection of formative assessment evidence at the center of IE implementation.

Instructional Development

External funding from the Davis Educational Foundation made it possible to offer stipends to a small cadre of departments and departmental faculty who served as "Davis IE Fellows" and worked with the Council on the development of the initial set of IE options. Fellows, who included tenure-track faculty and lecturers, were chosen on the basis of proposals submitted by departments, with teams from each participating department. All were experienced teachers, as stipulated by IE guidelines, with the responsibility of developing their department's IE course. The Council's discussions with these IE Fellows (through workshops and individual consultations) quickly surfaced the instructional design and delivery challenges associated with meeting the IE criteria.

Incorporating learning experiences from Gen Ed into the major, in a way that both the instructor and the student find substantive and meaningful, has been a primary challenge for faculty and departments. (This is not true, however, for incorporating Gen Ed learning objectives—like writing, oral communication, etc.—into the courses since instructors are already attuned to these sorts of objectives.) An even greater challenge, for many faculty, has been figuring out how to incorporate the IE "reflection" component. Early on it became clear that the Council had to develop a clearer definition of what was meant by reflection (see IE Reflection Examples). However, the problem for faculty wasn't only definitional; it was also about the kinds of assignments they could use that would be effective in fostering student reflection. The requirement to integrate and reflect upon their learning experiences also imposes a challenge for many students, who have generally not been asked to do this kind of thinking in most of their other courses at the University.

To address these challenges (integration of Gen Ed and reflection on learning), the Council sponsored a series of workshops and consultation sessions to offer instructors examples of assignments (such as specific writing prompts that could be used) and activities (such as a mapping exercise that asked students to draw connections across their varied undergraduate experiences and their personal and anticipated professional lives).

Formative Assessment

The challenges associated with implementation made it even more important to conduct systematic formative assessment of the effort. In line with the goals articulated by Stitt-Bergh and Hilgers (2009), we designed and carried out a locally based assessment with substantial faculty involvement and collaboration with our Office of Academic Planning and Assessment (OAPA). First, an Assessment Team was created with representatives from the Gen Ed Council and OAPA to design a plan. And, as the reference above to the mapping exercise we used illustrates, formative assessment tools and information provided substantial direction for our approach to instructional development throughout the implementation period.

Once the first rounds of IEs were offered, we employed a multi-method approach to collecting information about how the IE was actually "working" for students and for instructors. These methods and sources of information include analysis of IE course syllabi, student integrative mapping of their transcripts, a survey of IE instructors, a survey of students enrolled in an IE, and focus groups and interviews with students.

Responding to results indicating that teaching for integration and reflection were challenging for instructors and wanting to learning more about how to support instructors in that task, we pursued in more depth the question of how reflection and integration were being emphasized and evidenced in IE courses. For this purpose we implemented a direct assessment of student work and a "deeper dive" into how a subset of IEs are designed and delivered.

Direct Assessment. Soliciting IE instructor volunteers, we collected samples of student work from 21 IE courses taught in the first year of IE offerings. Instructors were asked to select an assignment or two that best represented their focus on integration and reflection. We recruited a total of 10 instructors (who represented a variety of disciplines, varying levels of experience with the IE, and faculty representation from the writing program) to score student work using a rubric developed by the IE assessment team, the Integrative and Reflective Thinking Performance Rubric.

Deeper Dive. From among the IE courses that participated in the direct assessment, we selected a subset of courses for in-depth analysis based on the level and kinds of reflective and/or integrative learning evidenced in direct assessment of student work. We analyzed the course syllabi, reviewed assignments, reviewed student IE survey results, and interviewed instructors and a few students from each class, asking them to share and discuss some of their assignments from the IE with us.

What follows is a discussion of what we have learned through our instructional development and our formative assessment activities about how to foster integrative and reflective thinking in the IE courses—and the important role that writing plays in facilitating this goal. The assessment results described here provide important benchmarks for ongoing assessment as the program continues to develop.

Writing Was Central to Program Development for Understanding and Facilitating Integrative and Reflective Learning

As indicated earlier, one of the primary challenges of the IE implementation was in clarifying (both for instructors designing IE courses and for the Council charged with reviewing and approving proposals) what was meant by the "Integrative and Reflective Thinking" expectations at the heart of the IE. While the Council worked to clarify the definitions based on *their* understanding of the concepts, it was through the process of directly assessing student written work that our understanding of reflection and integration, and ideas for how to work with instructors to achieve these concepts, emerged.

Writing faculty were at the heart of this effort. The two authors of this article (again, one a WAC scholar) coordinated the direct assessment process and worked with the IE assessment team on the development of the Integrative and Reflective Thinking Performance Rubric we used to score student work. Writing faculty were also a part of the 10 faculty multidisciplinary team that reviewed student work and brought their experience and expertise in identifying the contextual factors that should be considered in doing this kind of assessment (e.g., the distinction between reviewing the "quality" of student writing and the kind of thinking evidenced in that writing, the complexities in assessing the writing of students for whom English is a second language).

Student writing samples contributed to our ability to clarify what we meant by integrative and reflective thinking and how we would come to understand the extent to which students were engaged in these kinds of thinking. In developing the Rubric, we drew not only from the established IE Criteria but also from early IE examples of student work. Having drawn up an initial set of Rubric criteria, we used the writing samples to identify characteristics of reflective and integrative thinking that were not apparent from the IE Criteria alone. This iterative process provided the opportunity for rich discussions (both among the assessment team designing the Rubric and later among the 10 faculty scorers as they worked to build consensus in using the Rubric) about our common and distinct understandings of integrative and reflective thinking *and* our perspectives on quality writing. The ability to draw from specific passages in students' work to illustrate those perspectives made these discussions particularly useful and concrete (see Figure 1 for the rubric traits).

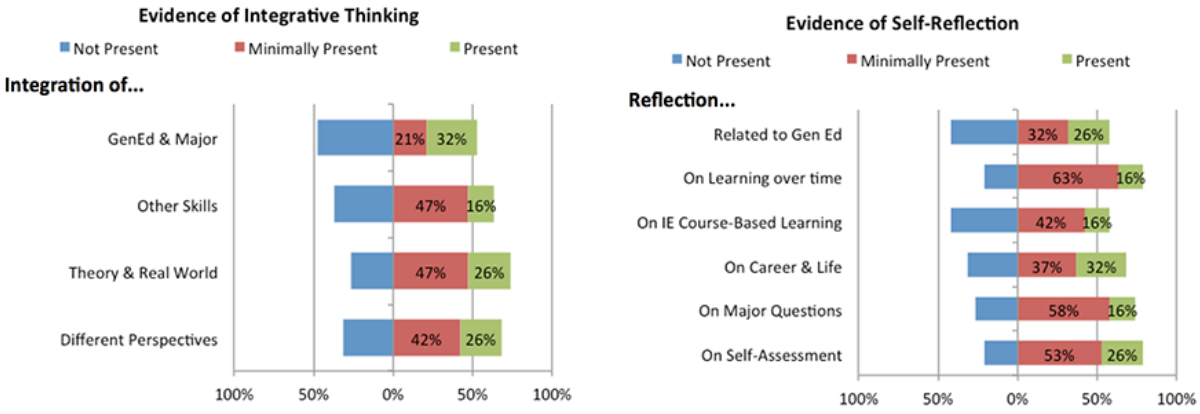
Through this process the assessment team also realized that direct assessment needed to take into account not only student writing performance, but the specific assignment and set of instructions to which students were responding. During rubric construction, assessment team members noted in some cases that it wasn't surprising that no forms of reflection, for example, emerged in the students' work when the assignment itself was not set up to prompt for or ask for reflection. As a result, the team added two IE Assignment Alignment questions to the Rubric, where scorers indicated the extent to which the assignment prompted for Integrative Thinking and for Self-Reflection. The assessment results showed substantial variability in the extent to which course assignments were addressing the integrative and reflective learning criteria outlined in the Rubric (perhaps not surprising given the enormity of the change and the short time frame for implementation) and that in the absence of assignments that prompt for these kinds of thinking, student work didn't demonstrate them. In this way, the results highlighted the need for ongoing instructional development as well as increased clarity in expectations.

Finally, the samples of student writing, and examples of well-aligned assignments, became the center piece for a number of the IE instructional development workshops. As was true for the IE Assessment Team and for the 10 faculty scorers, workshop participants found the opportunity to look at IE assignments and student work from across a variety of disciplines particularly useful and engaging.

Writing in Varied Genres Was Central to Realizing IE Goals in the Classroom

The direct assessment process described above helped us to see and acknowledge the multiple forms of integration and reflection possible through the IE. As Figure One shows, the kinds of Integration that stood out in the student writing samples were "Applying theories/principles to real world contexts" and "Acknowledging and using different perspectives." This result is perhaps not surprising given that this kind of thinking is already asked for in many courses. The varieties of Self-Reflection were more revealing. The three kinds of Self-Reflection that stood out included "Self-reflection on one's learning over time," "Self-reflection having a broader societal/major questions component," and "Self-reflection related to one's own self-assessment as a learner." Given that in developing the IE courses, faculty had the most difficulty wrapping their minds around the self-reflection criterion, we find these results gratifying.

Figure 1 - Results from Direct Assessment of Student IE Writing Samples



Further, as you might infer from the results of the direct assessment, we found that in many cases, the kind of writing assignments faculty were developing for their IE courses were *different in kind* from ones used in other courses; this was particularly true of the IE assignments calling for self-reflection. We infer this is because the specific focus of the first IE criterion on reflection and integration kept faculty focused on these ways of thinking as they developed their courses and course assignments. More precisely, what we saw was that focusing on this objective when they developed course assignments led faculty to think of different types and purposes for writing, instead of focusing so much on disciplinary "content" or "writing skills."

In some instances, blogs were used for reflective purposes, much in the nature of learning journals advocated by WAC practitioners of the 1970's (e.g., Fulwiler, 1987). This is evident in a Legal Studies course, "Law, Societies, and Global Justice," which was revised to become an IE course. The course introduced students to various theories of justice as evidenced in specific international war crimes cases. The culminating assignment—which was in the pre-IE version of the course—asked students to analyze the evolution of their understanding of justice over the course of the semester. In revising the course to meet the IE requirement for reflection, the professor added the requirement that students keep a course blog, making regular entries as the semester progressed: the first entry asked for their initial conception of justice; the second asked them to reflect on a particular Gen Ed course that impacted their understanding of justice; and subsequent entries were to focus on their evolving understanding of justice as different theories were being presented and considered in terms of specific cases. These entries were also the basis for in-class, small group discussions. Students were then to draw on the blog for their culminating assignment, using it reflectively to trace their thinking over time. In interview, the professor said that she thought the blog was an important enhancement to the course because she values "getting students to watch how their own minds are developing," seeing it as key for "life-long learning." An IE course for Spanish that was linked to students' semester abroad also introduced a blog, in this instance as a means for students to make entries reflecting on language and culture and the impact of their experience on them, specifically their education and futures.

Writing in more conventional forms was the vehicle for approaches to connection-making in other courses. A Music course, History of Music from 1900-Present, which was also revised to become an IE course, provides a good example. To satisfy the IE requirement, the professor added a number activities, including three short writing assignments asking students to 1) reflect on a General Education course that "enriched your current understanding of music," 2) explain "your view of the role of music, musicians, … or music education in the 21st century," (connection to society), and 3) after attending a Bach Symposium, reflect on what you learned about "Bach reception in the 20-21st century. " For the second assignment, topics ranged widely, including the importance of music programs in low-income areas; the value of groups like "So Percussion", a chamber ensemble, that can function as a "gateway listening experience … to high quality art music"; and the palliative effect of music for hospice patients, a reflection on a student's experience playing her viola at a hospice. The final project was to be a research paper or "other creative project" that "integrates a discussion of music with another discipline outside the fine arts" and relates to each student's specific focus within the major (e.g. performance, music education, music history). Again, the topics were diverse, including one that drew on psychology to explore the cognitive interference effect that musicians with absolute pitch encounter when trying to transpose and two by prospective teachers developing lesson plans. One of the latter involved reading Shakespeare and music inspired by his plays; another was an interdisciplinary science and music unit, inspired by a Gen Ed science course, the Amazon Rain Forest and Biodiversity. Significantly, all of these assignments gave students room to select their own angles of interest to encourage personal engagement. And, as we hope the students' approaches

to the assignments illustrate, the assignments were quite different from what one would expect from a music history course, including a contemporary one. Students notice the difference as well, commenting that the assignments, particularly the shorter ones, made the course different from their other Music History courses in that they did engage them in reflecting more broadly on the connection between music and other courses and reflecting on an issue of central concern to them, the relevance of music to contemporary society. As the music professor commented, it's important to give students the opportunity "to put the pieces together of their learning." That's what the IE does and writing is central to that "putting together." A student echoed this comment: "It's so easy for like music majors to like fall into a rabbit hole of music and you like lose the ties to like actual world and like getting to like make actual connections between like, oh, this is what I learned in high school in my world history classes, so that was interesting." The Music History course also represents an "integration" challenge posed by revising courses to serve IE criteria, as opposed to designing entirely new courses. Some students found the three short assignments described above to be superfluous to the course while others, like the one just quoted, found them to be useful. This variability in students' preferences is not all together surprising given both the early stages of IE assignment development and students' capacities for self-reflection.

A few IE courses, particularly in applied majors, functioned more like capstone courses with added reflective components. Again, writing was central to meeting these objectives. For instance, the Building and Construction Trades major created a new course for the IE with two primary objectives: 1) in the manner of a capstone course, students were to work in teams, drawing on their prior and combined knowledge to develop a business plan for a hypothetical business; and 2) they were to reflect on their own learning and career goals. The writing assignments associated with the first objective were typical of the applied focus of a professional program course (e.g., project proposal, full business plan). Note that the project also involved collaborative work, another HIP. The assignments for the second objective were new for the professor and his students, developed specifically to fulfill the IE objectives. They included a series of short reflections associated with visits by working professionals to his class—asking students to consider what they learned and how it impacted their own career thoughts. The other major assignment asked students to consider each of the six learning objectives for BCT majors, and "reflect on how your own knowledge and understanding in that area [learning objective] have advanced over the 4 years of your undergraduate education based on 1) your academic experiences within the BCT major, 2) Gen Ed and other academic experiences not in the BCT major, and 3) other non-academic experiences." They were then to assess their strengths and weaknesses in each area in relation to likely career paths and conclude with a position title and position description for their "entry level dream job." As the instructor explained the course to students in the syllabus, "one of the goals of this course is to help you draw connections across the totality of your undergraduate experience. This gives you a chance to pause and reflect on how that might be connected to where you might want to go next."

Build Self-reflection and Integration into the Curriculum Vertically, Using Writing as a Means of Doing So

The BCT instructor, quoted above, spoke also of the need for students to begin this kind of thinking early on in their studies. The faculty survey and interviews with students and faculty underscored his view, pointing to the need to build occasions for integration and reflection more intentionally throughout the *entire* curriculum. One sign of this need is the faculty response to a survey item asking them to rate students' preparation to engage in the integrative and reflective learning at the heart of the IE requirement: Only 17 percent of IE instructors said students were "Very Prepared" for this kind of thinking, 53% said "Somewhat Prepared," while almost a third said students were "Very

Unprepared" (6%) or "Somewhat Unprepared" (24%). In their open-ended explanations for their responses, instructors who felt students were unprepared pointed to students' lack of experience with integrative thinking and with reflection on one's own learning. Some also indicated the need for further improvement in students' critical thinking and writing skills.

To better prepare students, faculty pointed to the need for more attention to these skills in all courses and the resources to enable smaller classes for these purposes. One instructor articulated the rationale well in a survey response:

> Individuals learn best when they are able to construct a mental framework into which they can incorporate new knowledge. I feel that undergraduates need practice in making connections and constructing these frameworks; otherwise, students tend to view their classes as separate from each other—discrete, semester-long units that can be completed and left behind. Because life-long learning and critical thinking skills are essential for professional success, as well as good decision-making in everyday life, I believe a college education should enable students to learn independently and think for themselves.

A student echoed this rationale:

> I think it's great to make connections among classes, across topics and readings; we should be critical of if and how and why what we learn in our university classes applies to our lives in a deeper and larger way.

These findings present us with the challenge of how to build this kind of critical reflection into the curriculum. While a few recommend adding an additional first-year course, from our perspective and that of other faculty, there are plenty of opportunities to build reflection and integration into the existing structure of courses, both Gen Ed and major courses, to lead to the IE course. In fact, some aspects of integration and reflection are already built into our Gen Ed writing courses. Students perceive this as well. Indeed, in early IE student survey narratives, some students indicated that the kinds of things they were being asked to do in their IE were "already happening" in their Junior-Year Writing course. In student focus groups, a few students echoed this perspective. To explore the relationship between the IE learning goals and the JYWP experiences, we administered the IE survey items that asked students how often they engaged in each of the primary goals associated with the IE to a sample of student enrolled in JYWP courses. The results showed that students perceived that both the IE and the JYWP reinforce the broad IE goals of integration and reflection although the specific learning objectives and assignments differ. The results also showed a perceived difference in degree for key goals. That is, students perceived in IE courses more reflection on learning in their major, and in Gen Ed courses and in JYWP courses, more focus on development of Gen Ed skills and reflection on self-as-learner. These results are not surprising, most obviously because of the focus on writing "skill" in JYWP courses. Further, a number of JYWP courses follow the lead of the first-year College Writing course in asking students to reflect on themselves as developing writers. Such reflections are often assigned as end-of-semester reflective essays on what students have learned and how they have developed in their JYWP courses. This more focused reflection complements the broader self-as-learner reflection in the IE courses.

In their survey responses and interviews, faculty and students made a number of other suggestions as to ways integration and reflection could be built into existing courses to encourage students to think more intentionally—right from the start of their university education—about their courses and how they might fit together, about themselves as learners, and, in turn, about course selection. These suggestions included providing more opportunities for students to engage in skills of writing, oral

communication, critical and creative thinking; giving students more opportunities to practice the IE learning objectives of making real world connections, hands-on experiences, and group work; and using portfolios as a means for students to collect their work throughout their years of study and reflect on that work. (See IE Research Brief 2). Writing is central to many of the pedagogical suggestions, as both a skill to be practiced and a vehicle for critical and creative thinking. Note that also these suggestions include many of the dimensions of High-Impact Practices.

Another suggestion, which a few departments are already starting to implement, was to structure occasions throughout courses in each major for students to think intentionally about their courses, what they are learning, and how they see the relation between their university experiences and their futures. Resource Economics, a department with three tracks for its majors, is considering how to do this within their existing curriculum. They are focusing on three courses: ResEc 112, Computing: Foundations to Frontiers, a foundational course for all majors in which students, working in a team-based learning environment, learn specific computer tools and concepts, and also build portfolios that include reflection on their competencies; ResEc 303 Writing in Resource Economics, the Junior Year Writing course, that focuses on "writing for a range of audiences and purposes, both within your discipline and in broader fields"; and their two-part IE requirement, including a course for each track focusing on interdisciplinary perspectives and a one-credit Reflective Portfolio course taken by all majors. This latter course takes students through a series of activities that engage them in mapping their college experiences (students' course work, internships, and extracurricular activities) and preparing job search materials, including a resume, "elevator speech," and LinkedIn page. All are included in a Reflective Portfolio that is introduced by an essay that both reflects on their learning and forecasts their future plans. The professor sees the kind of thinking—what she termed "the mind-set"—called for by the Reflective Portfolio as important not only at this point in students' lives but also throughout their lives: "They have to be sort of starting to practice thinking about what they're doing and how it all adds up and so they need that skill: the stepping-back and saying ‘what does it add up to?'" Writing—especially when combined with mapping and other inventory tools, collection and organization of personal learning artifacts, discussion with peers—is a powerful vehicle for that "adding up."

Closing Reflection

That we would find writing to be central to our implementation of a program stressing integration and reflection is probably not surprising to those of us in Writing Studies. It is particularly striking to us in this instance, however, since writing was not a focus of our design of the IE and, as we have indicated, was not even mentioned in the criteria for developing IE courses. It does, though, reinforce what we know from early WAC work that points to the connection between writing and learning—specifically integration and reflection, both key features of HIPs. Recall Janet Emig's (1977) landmark essay "Writing as a Way of Learning," which draws parallels between writing and learning, arguing that writing is uniquely personally engaged and connection making. This finding also reinforces more recent work on writing as a vehicle for reflection (e.g. Yancey, 1997, 1998) and Melzer's (2014) finding that institutions with WAC initiatives, of which UMass is one, include a higher percentage of exploratory and self-reflective writing than do institutions with no WAC program. At UMass, that means that there are faculty across departments who have thought about the role of writing in their majors and who are experienced with writing pedagogy, including drafting and revising, peer review, and attention to audience.

Our experience also underscores the wisdom of writing faculty being actively involved in general education program development and assessment, and taking the broad view of the role writing can play for learning. That is, the role of writing in general education is not only for development of

writing skills, worthy as that goal is. It also has an important role as a primary vehicle for ways of thinking associated with High-Impact Practices and valued for general education, including integration and reflection.

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