Structuring General Education

Allow me to begin by arguing that there is no perfect general education model that is appropriate for all institutions. In fact, there are as many models as there are institutions. Even models that look the same on paper are likely to distinguish themselves in their implementations, the finer details of syllabi, assignment design, day-to-day instruction, and so on.

Less obvious, but even more important, is the fact that all of these models are different for a reason. In his seminal 1980 article ''Avoiding the Potholes: Strategies for Reforming General Education,'' Jerry Gaff puts it this way: ''A program for reforming general education should be designed around each institution's character, the strengths and interests of its faculty, and the needs of its students'' (p. 50). Gaff lays out what he perceives as the forty-three greatest mistakes an institution can fall into as it reviews and revises its curriculum. The first ''pothole'' he mentions? When a university decides to find a program to import.

DISTRIBUTION VERSUS INTEGRATION

One way to understand the variety of general education models is to place them on a continuum, with so-called ''distribution'' models on one side, and ''integrative'' models on the other (Figure 1.1)

Distribution
Model

Integrative
Model

Figure 1.1. Continuum of General Education Models

Although there is a need to be careful about generalizing, typically a distribution model requires students to take more or less the following courses:

- Two courses in the social sciences
- Two courses in the arts and humanities
- Two courses in mathematics
- Two courses in the natural sciences
- Two courses in a foreign language
- Two courses in physical education

Variations exist, of course. Some schools allow students to do three math and science courses, choosing two from one area and one from the other. And many institutions grant competency or Advanced Placement credit in foreign languages, mathematics, and other areas deemed appropriate.

The history of this model is long and gradual, stretching back at least as far as the nineteenth century and conceptions of what a well-rounded individual, capable of intelligent discourse, might need to study. More recently, a distributional approach to general education has often been rationalized by a university's desire to create what it refers to as ''well-rounded'' graduates. English majors, the thinking goes, should know enough about how science works not to be fooled by shoddy reporting in the mass media; similarly, science majors should know enough about the nature of language and its rhetorical uses to be able to distinguish truly profound literary or film art from works designed purely to manipulate emotions. Certainly these are worthy goals.

At the other end of the spectrum are models that might be described as purely integrative. Defining this term can be a little difficult, but generally it refers to a model that makes deliberate attempts to create explicit connections among courses, fields, majors, disciplines, and traditionally academic and nonacademic areas or, even better, is designed to create the opportunity for students themselves to draw those links. Thus, a curriculum might be described as integrative if it requires courses that bring together different disciplines, say, Literary Responses to Science and Technology or Mathematics and Art. Similarly, a curriculum that requires students to synthesize their seemingly disparate educational experiences in, say, a graduation portfolio or a senior capstone course might be deemed integrative. In short, I consider as integrative any curriculum that goes beyond simply requiring students to take

courses from different disciplines and instead expects them, with the help of their professors, to explore the connections among these different areas.

DISTINGUISHING INTERDISCIPLINARITY AND INTEGRATION

Integrative and *interdisciplinary* are not necessarily the same thing. *Interdisciplinary* refers to programs, courses, or assignments that put together two or more distinct fields, and *integrative* more often refers to acknowledging the interdisciplinarity that already exists in a given field or topic. Therefore, *interdisciplinary*, as I'm using it here, often has an artificial quality, moving an instructor away from her discipline into other fields for which she may be less prepared. I have a degree in Victorian literature. Were I asked to teach, individually, an interdisciplinary course discussing literary exegesis and the scientific method, I might rightly argue that I'm being asked to teach something in which I have no expertise.

At the same time, I might easily teach an integrative course on science and literature in the Victorian era. Such a course would not require me to move out of my field; rather, it would ask me to use the expertise I already have regarding the period as a lens through which to discuss the science of the era. Thus, I might have students read and analyze the work of Darwin as a literary text rising from a particular social milieu or discuss the use of logic and science (or pseudoscience) in Sherlock Holmes. Similarly, I might easily teach a course discussing the pre-Raphaelite movement in literature and art or a course on sociological theory of the Victorian period and its influence on novels of the era, discussing theorists like Jeremy Bentham, Karl Marx, and Friedrich Engels, all thinkers I've already read and researched in order to better understand my field.

Similarly, asking a mathematics professor to teach, say, a course on literature and calculus might be a bit of a stretch (though many of the math professors I know are very well read). But asking a math professor to discuss how mathematics relates to, say, sports or voting methods or social theories on crime would make more sense, because these relate to things that mathematicians (depending on their specialties, of course) already do; math is already implicit within these topics. In other words, an integrative approach to curriculum is not interested in connecting things that don't come together naturally or even easily. Rather, integration encourages instructors to foreground—and students to explore—the connections that already exist between or within various fields and make the applications of our material an integral part of what we do.

Related to this, integration goes beyond interdisciplinarity in that it's often designed to connect not just one academic field to another but academic work to life beyond the classroom. A course can be integrative even if it focuses on a single field or topic as long as it explicitly asks—through lectures, discussion, and assignments—students to examine the implications of the course material

on the nonacademic world and makes these explorations part of the criteria for a good grade in the class.

It's tempting, of course, to argue that every course does this. ''When I teach biology,'' a colleague at another institution once told me, ''everything I include in the syllabus is relevant to my students' lives. Every time they draw a breath—that's biology!'' Such an argument can likely be made about almost anything we teach, from biology to sociology to political science to art and philosophy. There's no point, after all, in teaching something that is absolutely meaningless to students' lives.

What I'm discussing here, though, is more a matter of degree and deliberation. A course is truly integrative in nature when it does more than introduce material relevant to lived experience. It is deliberate and explicit about making those connections—and, necessarily, having students make those connections. One good example is service-learning, where students are required to apply their work in a class toward improving the lives of the larger community. A sociology course on writing grants for nonprofit organizations might have students working with programs in the community to draft and revise proposals and then writing a conclusive essay synthesizing their in-class and out-of-class experiences.

I am not saying that there is anything wrong with interdisciplinarity or that integrativeness is necessarily better. Indeed, designed carefully, interdisciplinary programs and courses can be very successful. It is not unusual, though, for faculty to feel anxiety regarding general education and the degree to which it does or does not ask them to move beyond their area of expertise. One purpose of distinguishing the two terms, then, is to alleviate these worries: curricular models or general education courses that are integrative in nature need not require faculty to teach outside their fields.

INTEGRATIVE COMPONENTS

Beyond the courses themselves, any number of structural components can make a curriculum more integrative. Requiring a common core—a class or series of classes—that all students at an institution must take regardless of major is one example. A core can create opportunities for students and instructors from a variety of disciplines to meet and discuss topics about which they are all concerned—the state of the environment, the nature of truth, and living a purposeful life, to name a few—drawing each from their own fields and learning from each other. An upper-level capstone course is one type of core component that asks students to synthesize their learning experiences in other courses they've taken, attempting to create a meaningful whole out of varied and sometimes conflicting information. Similarly, e-portfolios—an

online collection of artifacts (papers, presentations, and so on) from a student's relevant work in general education and other courses—are an opportunity for students to reflect on how all of their varied educational experiences, in and out of the classroom, relate to one another and their own goals for the future.

Another structural approach to integration might include campuswide themes under which general education courses are organized. A campus might choose, for instance, strands on technology and its consequences, the role of power, or gender and race. Courses might be offered under any of these strands by any department on campus. Under the topic of technology and its consequences, for example, a biology instructor might offer a course on global warming, a sociology professor might offer a course on social networking, and a literature professor might teach a section on science fiction or constructions of future worlds. Each course would have its own syllabus, goals, and assessments, but as students move from a course in one field to another under the same strand, they are given the opportunity to see how different fields approach related topics. Thus, they come to a more meaningful understanding of both the topic and the fields. (For further discussion of this model, see Chapter Two.)

A more explicit approach to this kind of integration can be found in learning communities. In its simplest form, this method entails enrolling students in a number of courses with related topics that are offered during the same term. For example, Ferrum College in southwestern Virginia offers a learning community on Appalachian culture. In a single term, students fulfill multiple general education requirements by taking courses in sociology, environmental science, and English. Each course teaches the usual introductory terminology and methodologies crucial to its field and then makes these concepts meaningful by applying them to the culture and region in which the campus is immersed. In addition, such a structure allows students to compare how these three fields vary in their approach to the same topic—again, offering the opportunity for greater synthesis and understanding on the part of the students.

THE TREND IN GENERAL EDUCATION

The trend in general education in the United States and elsewhere seems to show a shift from purely distributional models toward models that combine distributive features with more integrative components, moving from the far left of the continuum toward the center and even slightly beyond (American Association of Colleges and Universities, 2009). A recent survey sponsored by the American Association of Colleges and Universities of 433 institutions granting a variety of degrees reports that only 15 percent of responding institutions used models that had purely distributional attributes. Similarly,
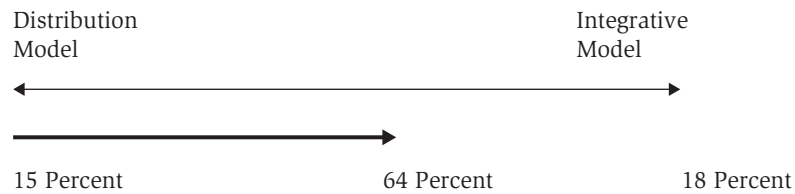
Distribution   Integrative
Model   Model

15 Percent   64 Percent   18 Percent

Figure 1.2. Recent Trends in American General Education

18 percent had models that consisted only of what the survey termed ''other components''—integrative features such as required thematic courses, core courses, and learning communities. Fully 64 percent of the institutions reported having models that combined distributional components with these ''other'' integrative features (American Association of Colleges and Universities, 2009; see Figure 1.2).

The reasons for this shift away from distributional models vary by university, state, and country—and different scholars point to different sociological and educational trends in an attempt to explain this seismic development in tertiary education. Gaston (2010a), for instance, lists seven ''drivers of change.'' Nevertheless, I'd like to point to four sometimes intertwining causes: the complexity of students' lives, the rapid growth of knowledge in our fields, the changing nature of the workplace, and the challenges of citizenship in today's world.

Our Students' Lives

It's astounding to think about how fragmented our students' lives can be. Every semester they take multiple courses that cover multiple chapters from multiple books on multiple topics in multiple fields; they write multiple papers, give multiple oral presentations, and take multiple exams; they do these things in major courses, minor courses, elective courses, and those pesky general education courses; they have practicum, labs, internships, work-study, off-campus jobs—and sometimes all of the above. Then they have their dorm lives, their social lives (often two very different things), their spiritual lives, service-learning projects, and other work in the community. As opposed to their professors, who grew up at a time when it was unusual to communicate with their parents more than once a week, for today's students, cell phones, Facebook, texting, and Skype ensure that their home lives—their families, their high school friends—are just as present and demanding as their school lives. They face a plethora of information, a virtual blizzard of factoids that they encounter hourly from blogs, Twitter, and the traditional media. Given all of this, it's astounding that any students are capable of forming a cohesive thought.

One reason so many general education programs are becoming increasingly integrative is that this approach seeks to create more deliberate—and

deliberative—moments when students can make sense of the often disparate information they're receiving and the often contradictory experiences they are having. Put another way, an integrative approach to general education creates synthesizing opportunities. I've already mentioned some of the ways a curriculum might do this through capstone courses, e-portfolios, or learning communities. Similarly, carefully designed courses might foreground the interplay among seemingly different topics.

A mathematician might create a course exploring the ways in which mathematics plays itself out in various forms of classical music, thereby deliberately breaking down assumptions about the seeming disconnect between these two fields. A statistician might create an assignment asking students to apply statistical methods to social justice—thus connecting math to social science, community service, and students' own values system.

Or an instructor might assign a paper requiring students from a variety of fields to deliberate on how the course content relates to their own field. For instance, in a recent nonmajor class on the social functions of poetry, students were asked to write an essay to the director of their major programs explaining why the study of poetry would be useful to undergraduates in that field. The results were telling: a premed student wrote that poetry could increase a doctor's empathy for her patients; a criminal justice major (and a veteran of the Iraq war) wrote about how studying literature can help us better understand ourselves, crucial for a police officer or lawyer facing a potentially soul-breaking situation.

Now consider a more difficult example. What would happen in a general education sociology course if an English major were given the assignment of analyzing why someone who studies literature might benefit from an understanding of the various forces that drive social interaction? What might an art major required to analyze the relation of chemistry to her field explore about the mixing of paints, the restoration of old works, an understanding of impressionism? What might a prelaw student come to understand about how an environmental science course might be relevant as he chooses a career path?

What a student finally writes in a particular paper (or oral presentation or exam question) about a particular course, though, pales in comparison to the cognitive skill she will develop as she attempts to apply information learned in one setting to another, as she tries to draw connections where, sixteen weeks earlier, she saw none. Courses and assignments of this sort offer students the opportunity to put things together, make a meaningful whole, look at contradictions and work them out, weigh options, and make choices that are thoughtful and enriching rather than hasty and inconsequential. This skill, practiced over and over again over the course of students' four or more years at university, will allow them to move forward in a world flooded with information and connections and disconnections and respond in a productive manner.

The Exponential Growth of Knowledge in Our Fields

In nearly every field, knowledge is growing quantitatively and qualitatively. Forty years ago, for example, literature studies in the United States were concerned largely with Western—and, generally, white male—texts, giving the occasional nod to non-Western works only in the context of their influence on European and American writers.

Since the 1980s, however, there has been an explosion of interest in non-Western and multiethnic, diasporic literatures. The canon, as a result, has grown. Where previously it was considered enough that an English major know Chaucer, Shakespeare, Dickens, Eliot, and so on, now departments must make careful decisions about how these authors should or should not be balanced by explorations of Toni Morrison, Amy Tan, Louise Erdrich, and others.

The reading of literature has also changed qualitatively. Where once literary theory was considered marginal—or even optional—for undergraduate studies, now most B.A. programs require at least one or two courses that are less interested in reading primary texts than in exploring the nature of that reading: how the various critical lenses readers apply to a text can change their understanding of it. Put another way, conceptions of what is necessary to be an effective English major have changed in a three-dimensional manner—spreading and broadening, but also spiraling upward. The very nature of the field has changed.

The discipline of English is by no means alone. As Julie Thompson Klein (2010) has pointed out, in the past few decades, many majors have demonstrated a ''greater porosity of boundaries'' (p. 156). In the sciences, for instance, the once fairly clear lines among physics, chemistry, and biology have become increasingly blurred. Whereas chemists once generally thought of themselves as specializing in one of several specialties (organic, inorganic, physical, and so on), now they may be part of a larger interdisciplinary team focused on a single problem. Thus, a chemist interested in drug discovery and development may find herself working closely with biochemists, synthetic organic chemists, computer scientists, and molecular biologists. Similarly, a physicist might go into medical physics, biological physics, materials physics, and so on. Meanwhile, string theory brings with it a kind of qualitative change, reshaping not just what we know but how we think about what we know.

Consider the study of psychology, where advances in technology have expanded our understanding of the mind. Using functional magnetic imaging, CAT scans, brain surgery, and new drugs, psychologists are adding new information about parts of the brain we've long known about and discovering areas we hadn't even realized were there. And here too there's a qualitative change: the discipline becomes more integrative, developing fields that combine

different areas, for instance, cross-cultural psychology or neuropsychology and evolutionary psychology. In these fields — and indeed, in most other fields — a textbook is out of date the minute it hits our desk — never mind four years down the road when students enter the workplace.

We're living at a time when we cannot possibly, in a four- or even five-year curriculum, teach students everything they need to know in our fields — even if we, as I've seen one institution do, create majors that take up 70 percent of a student's credit hours. Certainly we need to give students as much information as we can — or as much as their developing brains can take, which is not necessarily the same thing. In the end, though, we also need to prepare them to encounter new and unexpected information, evaluate the quality of that information, and find ways to reconcile that information with what they already know.

Here again an integrative approach to general education can be valuable, particularly when it is incorporated into a distributive model. As students move from one field to another in a distributional curriculum, they are constantly encountering new information, new ways of looking at the world, and new ways of thinking about and solving problems. By taking an integrative approach to these encounters, universities and individual instructors provide opportunities for students to explore in deliberate ways the connections and disconnections between new ideas and ideas and knowledge they they've already incorporated into their worldview.

This deliberateness is essential; it is not enough to simply be exposed to information. Exposure, particularly to information that is outside a student's field with no obvious connection to his or her long-term goals, will lead to short-term engagement at best: learn the material, take the test, get the grade, and move on to the next course.

In contrast, structuring metacognitive moments in the design of the course, the design of the assignments, or through some added feature such as e-portfolios gives students the opportunity to think about what's going on and consider how the skills and the ways of thinking in one class might be applied to another, seemingly entirely different, class. In this way, they begin to learn how to respond in effective ways when faced with new information, new challenges, new ways of thinking: Where have they seen problems like this before? What strategies did they use to help solve those problems? To what degree might those strategies work here? To what degree need they be changed to meet this new situation? In this way, an effective integrative approach prepares students for the changing nature of knowledge, even in their own fields.

The Changing Nature of the Workplace

A third point that may explain the increasing use of integrative approaches to general education relates to the day-to-day realities of the workplace. One of

the beauties of academia—for students, at least—is that they always know where they are. On the first day of class, their professors hand out syllabi labeled, ''Political Science 101,'' ''English 401,'' ''STAT 1210,'' or ''BIOL 220.'' There's a level of reassurance in this. It's nice to be able to say, ''Now I'm going to study chemistry,'' or ''Today I have classes in art, sociology, and history,'' or, ''Tomorrow I have a project due in communications.''

Unfortunately, that's not how most jobs work. An architect, for example, might begin the morning doing design, then go to a work site to talk to the contractor, next meet with a potential client to discuss building a new synagogue, and end the day at a city council meeting debating the subtleties of zoning permits. Although we can recognize the various fields implicit in these actions (engineering, management, sociology, religion, history, and politics), in the reality outside academia, these tasks blur together. Is the discussion of the new synagogue engineering, religion, politics, history, or sociology? Is the town council meeting more about business, sociology, politics, or management?

In the end, of course, the designation doesn't matter. Work is work, and the architect—like the guidance counselor, the pharmacist, the restaurant owner, the chief financial officer—must deal with each challenge the best she can.

Complicating all of this is the fact that the work world is changing rapidly. In *Two-Way Mirrors: Cross-Cultural Studies in Glocalization (2007)*, Eugene Eoyang makes the argument that the very nature of work has shifted dramatically. Glossing through three hundred years of modern history, Eoyang asserts that the expectations of employers with regard to their employees have evolved from labor (preindustry), to skills (during the Industrial Revolution), to knowledge (from the 1940s to the 1980s), to insight (today).

For our purposes, the most intriguing shift here is between knowledge and insight, with *knowledge* often used to refer solely to content and *insight* more about process. *Knowledge*, as I'm using it here, is quantitative: Do you have the information, yes or no? Do you have the right information, yes or no? Insight is qualitative—not just, ''Do you know X and Y?'' but, ''When X and Y fail, what ideas, thoughts, or cognitive paradigms do you have that will allow you to respond to this new, unanticipated problem?'' Insight of course requires knowledge; students in any field need to know the concepts of that field. But insight is also able to move one beyond the known and the familiar into the unanticipated and unfamiliar.

Here's another way to think about it. Edmond Ko, an engineering professor formerly at Carnegie Mellon University and now at the Hong Kong University of Science and Technology, speaks eloquently of ''wicked problems'': challenges in engineering and other fields where the boundaries of the problem shift rapidly because of information that is incomplete, contradictory, or continually changing. Ko, who is experienced in curricular design and an advocate for integrative learning, makes the point that engineers faced with wicked problems

must have ''wicked competencies''—in other words, the ability to adapt to a rapidly shifting landscape.

Although it's true that many of us (maybe even all of us) in the academy thrive by focusing our energy on narrowly defined topics—indeed, sometimes the narrower, the better—that's rarely the world for which we're preparing our students. Like engineers, accountants also face wicked problems, with laws shifting from year to year and even quarter to quarter. So too city managers must take into account changing budgets, directors of information technology constantly face new bugs and new technologies, and editors daily learn whole new fields in order to provide effective feedback to authors.

In short, employers are looking for graduates who demonstrate wicked competencies, as evidenced by a recent survey of businesses and other organizations that employ college graduates (American Association of Colleges and Universities, 2009):

- Ninety-one percent of the employers surveyed said that their employees were being asked to ''use a broader set of skills than in the past.''

- Eighty-eight percent of those surveyed said that ''the challenges employees face within our company today are more complex than they were in the past.''

Our students' work will require them to stretch daily, if not hourly, outside their undergraduate fields. Their work worlds will present them with problems that don't look like those they read about in the textbooks we assigned them, the problems they faced their first week on the job, or even the problems they struggled with at the beginning of the calendar year.

Not surprisingly, there is evidence that employers want graduates who demonstrate the flexibility of mind necessary to respond to the wicked problems of the workplace. In the same American Association of Colleges and Universities (2009) survey, employers were presented with seventeen possible university-wide learning outcomes and asked to state which ones they felt colleges should place more emphasis on. Three of the top seven items they chose involved the sorts of adaptive skills supported by an integrative approach to general education:

- Developing critical thinking and analytical reasoning skills (item 2, with an 81 percent support rate)

- The ability to analyze and solve complex problems (item 4, with a 75 percent support rate)

- The ability to innovate and be creative (item 7, with a 70 percent support rate)

Indeed, one could argue that the other four items at the top of this list—effective communication skills, the ability to apply knowledge in real-world

situations, the ability to make ethical decisions, and teamwork skills (American Association of Colleges and Universities, 2009)—also require the flexibility to respond to constantly shifting demands, be they rhetorical, moral, institutional, or otherwise.

The evolution of integrative learning occurred in response to the needs of this constantly changing workplace. An integrative approach asks students to be deliberative about their explorations of various fields—not just to experience these courses, but to think about how they fit into their own lives, their professional goals, their worldviews. For instance, as a student participating in a learning community in global climate change exits a biology lab on Great Plains ecosystems and ventures forth into her linked course on the politics of environmentalism, she should be asked to think about how the day's reading on polling methods can affect public policy on fertilizer runoff. Even better, the instructors of one or both of these courses might assign a final paper requiring students to detail the ways in which an ecosystem discussed in the biology class has been affected by procedural policies in the state capital.

Similarly, an institution might implement an e-portfolio policy that requires each student to provide a scholarly artifact—for example, an essay, project, or oral presentation—from each course of his or her term, then write a brief essay that explains the connections and disconnects he or she perceives among those fields. Thus, a student might find himself thinking about how his major course in twentieth-century physics relates to his required distribution course in romantic poetry—and writing an eloquent argument about string theory and Coleridge's ''The Eolian Harp.'' That such an exercise might strengthen the learning in both courses is worth noting. As Peggy Maki (2010) points out, ''Self-reflection reinforces learning by engaging learners in focused thinking about their understanding and misunderstanding'' (p. 48). In other words, the student learns the material in the course, under the guidance of the instructor, in a setting that is bounded on one side by the beginning of the term and on the other by the final exam. And then the student learns the material again, on his or her own, this time outside the traditional classroom, as he attempts to make connections that have nothing to do with exams, grades, or letters of recommendation, and everything to do with making sense out of two seemingly disparate topics, and between these topics and one's own life goals.

The Challenges of Citizenship in Today's World

What all of this—the explosion of media, the growth of knowledge, the challenges of globalism—adds up to is a world where emerging graduates are overwhelmed with information—factoids, sound bites, polemics, and data. Some of it is real and accurate and some of it blatantly false, but all of it needs

to be sifted and sorted, evaluated for accuracy, relevance, and efficacy. Paul Gaston (2010a) states it in this way:

> Never before has there been so great a need for learned and adaptable citizens capable of taking apart and understanding complex problems, of identifying reliability and authority among the many sources of information, of appreciating the quantitative realities that may lie beneath the surface, of thinking creatively about solutions, of communicating *to* others the emerging results of their work, and of working *with* others to bring solutions to practice [p. 10].

Such a world requires knowledge drawn from a variety of fields. When an oil rig explodes in the Gulf of Mexico, citizens should be able to accurately understand the consequences, short term and long term, of the disaster (biology, chemistry), should not be entirely reliant on the media for discerning responsibility (politics, journalism, textual exegesis) and degrees of culpability (business, government policy, ethics), and should be able to respond to the situation in an informed, deliberative, and productive way.

Were university education a ten-year endeavor allowing over a thousand credit hours, delivering the content that would create such a citizen possible might be feasible. But that is not the case. Students who do remain in academia for a decade generally do so in order to become highly focused professionals versed in a small corner of a narrow field. The rest grab what they can in a four- or five-year stint. We can give them a distribution of knowledge, but we can't possibly cover everything they need to know to react thoughtfully to today's increasingly globalized, technological, polarized world. In other words, citizenship in today's world requires graduates to have the intellectual and cognitive skills that allow them to respond to new information (whether it was ''covered'' in a course or not) by calling on past experiences, some similar, some not; seeking out appropriate background information; evaluating data carefully and thoughtfully; and being capable of synthesizing disparate ideas in order to respond accordingly. Even more, citizenship today requires graduates who can anticipate these problems and effectively combine business acumen with ethics and political efficacy with environmental sensitivity. In short, citizenship today needs an integrative approach to university education that goes beyond exposure and toward synthesis, deliberation, and application.

CONCLUSION

As students move from field to field and are asked to intellectualize that movement, several things happen:

- They have the chance to get used to constantly facing new problems, new challenges, new ways of thinking, new ways of approaching the world.

- They are provided the opportunity to see patterns that might not at first be obvious to them—the ways in which, for instance, a scientific insistence on objectivity is also essential for literary exegesis or how the challenges of writing a computer program relate to the efficiency of language in poetry.
- They are given the chance to experiment with transferring and adapting problem-solving strategies—to see, for instance, how the methods they learned in psychology last semester can be adapted to the new and different challenges of an art history course.

In the end, an integrative approach to general education seeks to create an academic world that mimics more closely the wicked problems of today's work world. And more to the point, integrative general education attempts to be deliberate about providing graduates with the wicked competencies they will need to be productive citizens in that world.