STARTING WITH WORLDVIEWS:

A Five-Step Preparatory Approach to Integrative Interdisciplinary Learning

by

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Abstract: In this article we propose a five-step sequenced approach to integrative interdisciplinary learning in undergraduate gateway courses. Drawing from the literature of interdisciplinarity, transformative learning theory, and theories of reflective learning, we utilize a sequence of five steps early in our respective undergraduate gateway courses to foster preliminary lessons crucial for integrative interdisciplinary learning. Collectively, these steps help students recognize their own worldviews even as they will eventually understand and value the multiple disciplinary perspectives to be integrated in interdisciplinary work. The five steps discussed in this article are initial community-building activities, a class viewing of a segment from The Muppet Show featuring Harry Belafonte, a combination of class and small group discussion, an intellectual autobiography assignment, and our respective adaptations of Smith Magazine's Six-Word Memoirs.

Keywords: integrative interdisciplinary learning, transformative learning, worldviews, community-building, intellectual autobiography, Six-Word Memoirs

Introduction

Integrative interdisciplinary learning fosters connections between disciplines and integrative building of new conceptual models both inside and outside the classroom (Klein, 2005). While we agree with Klein (2005) that "there is no unique or single pedagogy for integrative interdisciplinary learning" (p. 9), we propose that some preparatory lessons are needed to begin the process in introductory gateway courses. In making this proposal we are aware of the considerable work already produced in the area of interdisciplinary studies pedagogy. Exemplary syllabi have been spotlighted on the Association for Interdisciplinary Studies website (http://www.units. muohio.edu/aisorg/syllabi/collection.shtml), and they serve as indispensable resources for those designing new gateway courses. Since 2005 three interdisciplinary studies textbooks have been published (Augsburg, 2006; Repko, 2012; Repko, Szostak, & Phillips Buchberger, 2013). In addition, several assessment rubrics for student integrative interdisciplinary learning have recently been developed (Boix Mansilla et al., 2009; Rhodes, 2010; Wolfe & Haynes, 2003).

While these resources have greatly advanced the pedagogy of interdisciplinary studies, several scholars of interdisciplinary studies assessment have noted that the quality of undergraduate interdisciplinary research varies widely (Augsburg, 2012; Haynes, 2012; Newell, 2006; Sortor, 2012). Scholars have additionally observed that undergraduate students' ability or lack of ability to achieve mastery at integration can often be traced back to how well they understand the concept of disciplinary perspective (Haynes, 2012; Sortor, 2012). Abbott and Nantz (2012) have made the case that, rather than jumping to teaching integration, instructors need to develop integrative habits of mind early in students' undergraduate careers. We assert that students need to understand the concept of worldview early in introductory interdisciplinary coursework such as our gateway class, so that they can better understand how worldviews help determine what problems they see and how they view them, i.e., their perspectives on those problems. They also can better understand that individuals may see the same problems from different perspectives stemming from their own respective worldviews. Later in introductory courses, when students are introduced to the concept of disciplinarity and disciplinary perspectives, they can grasp these concepts better by deploying the following analogy: Individuals see the world and view complex problems in ways similar to those in which disciplinary scholars view the specific problems they study.

We are fortunate to teach at San Francisco State University because it has a rich tradition of undergraduate interdisciplinary education and a longstanding mission to promote social justice. Students at our university are ethnically, socioeconomically, and academically diverse. Many are first-generation college students. In 2007 we were two out of five assistant professors hired to revise the curriculum for San Francisco State University's undergraduate Liberal Studies program, which at the time had been in existence as a multidisciplinary program for 35 years without any core faculty. Part of our charge was to create interdisciplinary gateway and capstone courses in order for the program to become more truly interdisciplinary. In 2008 the Liberal Studies program launched a gateway course, Perspectives in Liberal Studies, to introduce students to interdisciplinarity and to fulfill a junior-level writing intensive requirement for the major. The faculty developed the following six learning objectives for the gateway course:

- 1. to learn how to become familiar with the scholarship on which knowledge in a specific discipline is based;
- 2. to integrate different disciplinary approaches to the study of complex issues;
- 3. to read and evaluate a wide variety of academic, creative, professional, and popular sources;
- 4. to frame questions, make claims, and support assertions;
- 5. to craft well-written, thesis-driven papers that can distinguish between different disciplinary methods and potentially integrate them;
- 6. to gain a comprehensive overview of the Liberal Studies curriculum, including an understanding of the core areas of study, the process of course selection and advising, and exposure to the options of the major.

At the time, the focus of the course was to provide an overview of disciplinarity and disciplinary approaches to prepare students for writing an integrative research paper by the end of the course.

We made additional revisions a year later in 2009 when initial assess-

 $^{^{\}rm 1}$ Versions of the program's history have been published in Augsburg & de Barros (2010) and Goldsmith (2009).

ments revealed that our students needed more instruction about interdisciplinary research and practice before demonstrating the mastery of integrative skills in a research paper (Augsburg, 2012). From our assessments of student writing we quickly discerned that students did not fully comprehend what constitutes disciplinary research, let alone what a disciplinary perspective or insight might be. Indeed, we found that students often could not identify what they wanted to learn or why since they had yet to make connections between their experiences and their academic interests. We discovered that something was missing: a link between their concepts of themselves and who they are (their self-identities) and what they wished to study (using disciplines). That link, we argue, is the concept of worldview, which is why we have focused on developing a unique transformative integrative interdisciplinary pedagogy that helps students understand, recognize and value the concept of an individual worldview.

In our gateway courses, the introduction of the concept of worldview precedes the introduction of the concepts of disciplinarity and disciplinary perspectives. This process begins with building a strong sense of community in our multicultural classrooms, where students' backgrounds and academic interests vary widely. We assert that it is critical that students understand and reflect upon their own worldviews, their communities' worldviews, and the worldviews of those beyond their communities before we can expect them to understand that academic disciplines involve communities of scholars who have distinct worldviews, perspectives, and insights.

We have developed our five-step process by drawing from the professional literature on interdisciplinarity, transformative learning theory (Mesirow, 1991), and theory on reflective learning (Yancey, 1998). We start with Augsburg's (2006) premise that interdisciplinary studies helps students "learn how to integrate the personal, the educational, and the professional" (p. xii). The initial focus of the gateway course on "the personal" helps students to recognize their own worldviews as well as those of others. We aim to help students understand the concept of worldview early in the course so they are later ready to understand the concept of disciplinary perspectives. More specifically, we make the case that students can be more effectively prepared for integrative interdisciplinary learning by creating activities that link explicitly the preference and appreciation for diversity among people with the skills of recognizing, understanding, and respecting multiple worldviews, and, in subsequent lessons by analogy, disciplinary perspectives. We argue that interdisciplinary studies students need to have these critical lessons early in their programs of study.

Theoretical Frameworks

We begin our respective gateway courses by teaching students to recognize the personal lenses they deploy to see themselves and their places in the world. This recognition is a critical step in their transformation from "unconscious interdisciplinarians" (Murray, 1986) who can be unaware that their interests exceed disciplinary boundaries (assuming that they know what their interests are) to self-conscious and reflective interdisciplinary scholars and practitioners.

To accomplish these goals, we draw from constructive-developmental educational theories. Our emphasis on recognizing, understanding, and articulating one's personal worldview draws from, and builds upon, transformative learning theory (Mezirow, 1991). According to Irene Karpiak (2000), "a central feature of transformative learning is critical self-reflection, a process whereby adults examine the cultural assumptions and meanings that underlie and shape their life" (p. 33). Mezirow (1991) argues

transformative theory... grows out of the cognitive revolution in psychology and psychotherapy instigated by scores of studies that have found that it is not so much what happens to people but how they interpret and explain what happens to them that determines their actions, their hopes, their contentment, and emotional well-being, and their performance. (p. xiii)

A fundamental constructivist assumption that underlies transformation theory is that critical self-examination and reflection can be instrumental in validating ourselves. They can help to create "a conviction that meaning exists within ourselves rather than in external forms such as books and that the personal meanings that we attribute to our experience are acquired and validated through human interaction and communication" (Mezirow, 1991, p. xiv). We build on transformative learning theory by asking students to undertake a series of activities to help them recognize and reflect upon their knowledge and experiences before expecting them to do interdisciplinary academic research. We offer next a detailed analysis of the five-step approach that makes up approximately the first three weeks of our 16-week gateway course. Although we both have carried out the sequence, we also have made small adjustments within each step whenever necessary depending on the particular classroom situation. Thus we recognize that the sequence can be modified according to each instructor's needs.

Step One: Establishing Classroom Community

The first step is to create a classroom learning community with a series of first-week classroom activities during which students get to know their classmates. Students are asked to reflect on who they are and what they know about those around them. As Sapon-Shevin (2010) points out, creating a sense of community can be the "foundation of a successful classroom" (p. vii).

After the instructor goes over the syllabus and course requirements, the instruction begins with an activity during which students move around the room to greet each other. At a time when virtual introductions are routinely made via e-mail and through social networking sites, these face-to-face interactions can foster a lively classroom environment. Next, students are asked to find a partner and spend approximately 5 to 10 minutes getting to know each other. Students are then instructed to introduce their partners to the rest of the class by focusing on their partners' names, hometowns, academic interests, and career goals. This activity takes about 40 minutes in a class of 25 so that every student has the opportunity to tell his or her brief story to a partner, and listen to the rest of the students' introductions. This activity not only facilitates classroom community building, but it serves as a key preparatory activity for students to understand the diversity among worldviews, as well as to make connections between worldviews and academic interests.²

Once a sense of community is initially established during the first week of class, we spend much of the second and third weeks of the course helping students recognize their personal worldviews. Why, in a society hampered by extreme individualism, would we focus on and thereby reinforce individual personal perspectives? Miller (1982) observes that "[w]orld view [sic] is a universal concept. Every culture, every subculture and every group has one. Students can more easily acquire an understanding of something if they themselves have experienced it" (p. 6; see also Miller, 2008). How then do we help students realize that there are multiple diverse worldviews? We suggest that students first need to learn how to become metacognitively aware of their personal worldviews—the lens through which they view the world. Becoming metacognitively aware of their worldviews can be unsettling, so we provide significant time for small group and class discussions. Students

² Our gateway course is capped at 25 students because it also serves as the writing-in–the-major course that requires detailed attention to student writing. We recognize that such student-to-student connections may not be practical in larger classes.

are encouraged to see themselves as part of a larger community that is struggling to understand the complexity of the world (and the class itself).

Step Two: Media Screening

The second step in our sequence is a class media viewing of musician and social activist Harry Belafonte performing his song "Turn the World Around" with Jim Henson's Muppets. Originally aired in 1979, this segment from the 14th episode of Season Three is among the most memorable and celebrated of the *The Muppet Show*'s entire five-year run and can be readily accessed from YouTube.

The segment begins in the guest star's dressing room. As Belafonte prepares for his debut performance of "Turn the World Around," he has the following conversation with Fozzie Bear:

Harry: How's the writing going, Foz?

Fozzie: Oh boy, I didn't know it would be that tough, Harry. Oh, you know—you write a lot of stuff.

Harry: Well no, not really. I write songs.

Fozzie: Yeah, they are terrific. Hey! How do you get ideas for all those songs?

Harry: Well they don't come easily. You have to get inspired.

Like the song we are going to do next—I discovered that song in Africa. I was in a country called Guinea and I went deep into the interior of the country and in a little village, I met with a storyteller.

That storyteller went way back into African tradition and African mythology and began to tell a story about the fire, which means the sun, and about the water and about the earth.

And he pointed out that all these things put together, turn the world around.

And that all of us we are here for a very, very short time and

in that time that we are here, there really isn't any difference in any of us, if we take time out to understand each other.

The question is, do I know who you are? Do you know who I am? Do we care about each other? Because if we do, together, we can turn the world around. (Juhl, 1979) [transcription by authors; emphasis added]

Fozzie Bear's inquiry into how Harry Belafonte overcomes his writer's block resonates deeply in a writing intensive gateway interdisciplinary studies course. Students who are inexperienced writers can feel intimidated by the writing process, which is why it is helpful for students to hear that writing is a challenging process for everyone, including successful artists. Belafonte reminds our students that writers have to be personally inspired. He gives them an example of storytelling that evokes imagination, listening, and learning—all things that help make students critical thinkers while emphasizing that telling stories is a good way to start the process of discovery.

As Belafonte explains what he learned in Guinea to Fozzie, drumming is heard in the background, serving as an auditory segue to his performance. Belafonte is then seen playing drums and singing. He is quickly joined by Muppets donning West African masks that were designed specifically for this episode. The lyrics begin by repeating the creation myth:

We come from the fire, living in the fire, go back to the fire, turn the world around.

We come from the water, living in the water, go back to the water, turn the world around

We come from the mountain, living in the mountain, go back to the mountain, turn the world around.

With these lyrics Belafonte gives tribute to his journey of self-discovery and the lessons he gleaned from it: increased global awareness and intercultural sensitivity. The chorus of "Turn the World Around" asks the listener the following:

Do you know who I am? Do I know who you are? See we one another clearly, do we know who we are? Oh oh, so is life, a-ba-tee, wah, ah, hah! So is life. Water make the river, river wash the mountain. Fire make the sunlight, turn the world around.

Heart is of the river, body is of the mountain. Spirit is the sunlight, turn the world around.

We are of the spirit, truly of the spirit. Only can the spirit turn the world around.

(Belafonte & Freedman, 1977)

The chorus and the final verse drive home significant points: It is in getting to know ourselves, knowing those around us, and attempting to see each other clearly that we can begin the process of learning from each other and turn the world around—figuratively speaking. The final verse emphasizes the complex interconnections between humans and the environment, suggesting that integrative interdisciplinary understanding is the way to turn the world around. While preparing students for the media segment is helpful, it is not necessary. The discussions afterwards are more critical. The third step will enable students to make connections between what they have just seen and recognizing their own personal worldviews.

Step Three: Post-Media Viewing Class Discussion and Reflective Writing Activities

This step consists of a triad of class activities designed to take place after the media viewing of Belafonte and the Muppets performing "Turn the World Around." The segment is exciting, engaging, and catches students off guard—what could they possibly learn from the Muppets, and why are they watching a segment from *The Muppet Show* in a college course? After students watch the 7-minute segment, spirited class discussions usually follow with only slight prompting ("What did you think?") from the instructor. As students begin to express their reactions to what they just saw, they begin to review and reflect on its messages. Students are then asked to consider the reasons why the instructor would show this media clip, which encourages further class discussion.

Students are asked to reflect further on what they have seen with brief in-class writing exercises. One useful prompt has been to ask students what Harry Belafonte means by the phrase "turn the world around." Students are given approximately 10 minutes to write freely. During this time they can formulate their own opinions before a larger class discussion ensues.

The class discussions can segue into an additional activity where students

are paired or put in small groups and asked to describe who they are themselves in terms of their intellectual interests. Students are directed to repeat Belafonte's questions to each other: "Do I know who you are? Do you know who I am? Do we care about each other?" Students are also asked to interpret Belafonte's lyrics and apply his line of thought to their own lives and the complex problems they see in the world. Through the process of asking each other questions students begin to identify academic interests, skills, and knowledge they have, including information they may have failed to mention during Step One's first-week community-building activities.

By sharing brief personal life histories students become increasingly interested in discovering some initial common ground. Students' discussions of their academic or intellectual interests may provide the foundation upon which integrative interdisciplinary learning can build. Students gain mutual appreciation as they discover where their differences and similarities lie. For example, they learn that they may have taken similar courses and share similar academic interests or professional goals despite their different backgrounds. By learning how to recognize and acknowledge their similarities or shared interests—their common ground—they begin to feel comfortable identifying their personal worldviews and learning about the worldviews of others. From the activities performed during Step Three, students also learn to recognize the value of storytelling. In Step Four they will practice articulating their experience in written personal narratives with the intellectual autobiography assignment.

Step Four: The Intellectual Autobiography Assignment

The intellectual autobiography is the foundational written assignment in our junior-level gateway course that was designed to meet the University's writing-in-the-major requirement. While many undergraduate interdisciplinary programs require at least one autobiographical assignment in their curricula, little attention has been directed towards reflecting on this standard component of interdisciplinary programs. The intellectual autobiography is a complex assignment that prompts students to be active and engaged in their own learning (Nardone & Lee, 2010). Our interest in the intellectual autobiography assignment is in its capabilities to prompt student reflection and hence to encourage self-reflection as a habit of mind. Through the reflective process of writing their intellectual autobiographies students learn to articulate their unique worldviews. The intellectual autobiography can be more accurately described as reflection-in-presentation (Yancey, 1998) as

it encourages students to reflect on their educational journeys for others to read, thus making such reflection a social and rhetorical activity.

As they recognize their individual outlooks, students begin to have a better understanding of how their backgrounds have shaped who they are and where they have been as well as where they want to go (their goals). They learn to identify their academic interests, which include what they would like to learn more about. Our intellectual autobiography assignment guidelines also prompt students to identify relevant personal preferences and characteristics, and provide examples of instances when they exhibited qualities their assigned readings³ have identified as typical of interdisciplinarians such as resilience or having a preference for diversity. In so doing students begin examining how their worldviews might align with those of scholars and experts who share similar academic interests.

The intellectual autobiography is thus a "search for meaning" (Frankl, 1959). It positions the student for learning by examining social and cultural influences, biases, intellectual interests, and skills, as well as challenges. Even more importantly for transformative learning, it fosters reflection on how one responds to such challenges. Students begin to learn that they are shaped by their experiences, and that these experiences, whether good or bad, define who they are. These experiences also determine viewpoints from which students perceive themselves, the world, and specific problems. For example, students who grew up financially disadvantaged may view the world through an economics lens in terms of scarcity, while students who visited museums as children may have developed a rich appreciation for the fine arts. We encourage our students to find the lessons they have learned and turn them into examples of how they have overcome obstacles. In so doing, students are engaged in transformative learning in addition to recognizing and articulating their worldviews.

This is often hard work. Students may have to face their academic shortcomings—and the reasons for them—before they can transform such views. Students select their courses based on numerous factors: fulfillment of college or major requirements, preparation for a professional career, or curiosity about a subject. They might think the courses are fun or interesting, or they like the course instructor. But do students consciously realize

³ Augsburg (2006) includes a chapter on Klein's (1990) discussion on "The Interdisciplinary Individual." Bromme (2000) has critiqued the utility of identifying "personal traits" shared among interdisciplinarians, and his point is well taken. Nevertheless, in our experience introducing these as preferences and/or commonalities among interdisciplinarians can serve as a helpful heuristic for introductory students.

that the courses they choose are also germane to their lives? The intellectual autobiography challenges students to examine why they picked certain classes instead of others. What academic subjects and complex problems did they gravitate towards and why? And how will those choices help their intellectual development and meet their career goals? Such reflection uncovers the links between academic interests and personal interests, thereby enabling students to see how much they are personally invested in their education.

Yet, as with any other class assignment, the intellectual autobiography can be a challenge to those students who resist self-reflection. There can be many reasons for the resistance. Some students prefer not to be pinned down to any area—they are interdisciplinarians by nature, dissatisfied with monodisciplinary constraints in learning (Klein, 1990). Some are afraid to assert their interests; they need to know that it is perfectly satisfactory, even desirable for them to do so. Some may claim that they don't care, stating that they just want the quickest way to graduation. We challenge those students to think more critically, or more accurately, to re-examine their claims of indifference for the sake of expediency. Of course they care! They may have become jaded by their educational experiences and developed thick skins as if it were preferable not to embrace the very activity—education—in which they are engaged. The intellectual autobiography helps students reframe challenges as opportunities. In so doing, they learn to value their integrative interdisciplinary education.

After they complete the process of self-reflection through writing their intellectual autobiographies students tend to have a stronger sense of their worldviews and their identities as interdisciplinarians. They reflect on their academic interests, what problems interest them, and the reasons behind their interests. In so doing, we argue, they become better prepared for learning more about disciplinarity, interdisciplinarity, and interdisciplinary research practice. But prior to learning about integrative interdisciplinary learning, they are encouraged to take the Fifth Step and write their Six-Word Memoirs

Step Five: Composing Six-Word Memoirs

Once students understand the connections between their personal worldviews and their academic interests, we turn next to a creative class exercise that illustrates that there are numerous ways communicate one's story. Step Five of our sequenced process borrows from the online *Smith Magazine*'s project called the *Six-Word Memoir*®, which is exactly what the name denotes: a memoir written in six words (http://www.smithmag.net). In 2008 *Smith Magazine* published an initial general collection of Six-Word Memoirs titled *Not Quite What I Was Planning* (Fershleiser & Smith, 2008), and more recently, has published numerous additional collections of Six-Word Memoirs related to themes ranging from love to green consciousness. After introducing students to *Smith Magazine*'s Six-Word Memoir concept, and showing some notable examples featured on its website, we ask students to spend approximately 10 minutes coming up with six words to summarize their educational experiences, interests, or intellectual journeys. The following are a few Six-Word Memoirs written by students in our two gateway classes in Fall 2011:

Using my passion to help others.

Teach the children...Save the world!

Influencing the lives of young people.

Hong Kong travels, culture shock, adaptation.

Growing up hybrid, coming to America.

Each Six-Word Memoir reflects one's varied perceptions, educational journeys, and life experiences. Students spend years in school to develop competencies and mastery in multiple subjects or disciplines. With so much emphasis on learning multiple subjects, students typically lack the opportunity to reflect on the process and thus learn about themselves. We ask students to reconsider and reflect on questions similar to those they should have answered in writing their intellectual autobiographies: What do you think makes you who you are? How did your intellectual interests develop? How are you making sense of your own life? How did you get to where you are today, and who helped you along the way? Where are you trying to go? What do you need in terms of knowledge for your journey?

Not surprisingly, students tend to view the Six-Word Memoir as a snapshot of their intellectual autobiography. We do not disagree. Unlike other forms of student reflection exercises described by Yancey (1998), the Six-Word Memoir is regarded as a literary form, which is why we view it as an innovative or alternative reflective exercise (Cox et al., 2011). While the Six-Word Memoir is intended to stand on its own, we have observed that students sometimes revise the title of their intellectual autobiographies to incorporate

their Six-Word Memoirs, as the following example illustrates: "Six Words: Undecided Student Striving to Find Clarity."

Overall, our five-step sequenced process helps students to learn how to examine the lens through which they see the world around them; in so doing they prepare for integrative interdisciplinary learning. To be more specific, the initial community-building class exercises in Step One introduce the concept of worldview. In Step Two, the media viewing of *The Muppets Show* segment reinforces in students the importance of appreciating diverse worldviews. The class discussions and community-building activity following the media screening during Step Three help students to understand and appreciate the power of telling stories, listening to the stories of others, and understanding more fully the concept of worldview. Step Four's intellectual autobiography assignment requires students to examine their personal intellectual journeys, reflect critically on their unique learning processes, explore the social and cultural forces influencing their intellectual passions, tell how they developed their worldviews, and identify their academic and professional interests. Finally, Step Five's Six-Word Memoir is a powerful reflective class exercise that encourages students to express their worldviews and self-identities concisely.

Conclusion

In the Liberal Studies Program at San Francisco State University, we prepare students for interdisciplinary integrative learning by utilizing a sequenced transformative pedagogical approach of five steps that focuses on the recognition and appreciation of multiple worldviews. Developing an understanding of who we are entails the recognition of personal worldviews and the recognition that there are worldviews that may differ from our own—both of which are effective preparatory activities for understanding more advanced concepts that will be introduced later in the course such as disciplinary perspectives, interdisciplinarity, and integration.

We conclude with the observation that Harry Belafonte has become an ideal spokesperson for our interdisciplinary studies gateway classes at San Francisco State University. We interpret "turning the world around" as an integrative interdisciplinary metaphor for addressing complex problems, particularly social injustice. His integrated personal and professional background as a musician, singer, songwriter, actor, civil rights activist, and social justice advocate is one that students admire. Belafonte's biography fuses the personal, academic, and professional. The inspiration to write music and lyrics that Belafonte discovers on his trip to Guinea, the importance of

knowing who we are, and the suggestion that through knowing each other's worldviews we can turn the world around, are at the foundation of what we are trying to accomplish in our gateway course.

The harmonic capstone to Belafonte's 1979 Muppet Show appearance offers practical lessons for becoming interdisciplinary, as do the intellectual autobiography and Six-Word Memoir. While we face a multitude of challenges and opportunities in our academic careers, we rarely get an opportunity to begin to examine who we are, who the people around us are, and how our collaborative work together is useful in understanding and solving complex problems. Even more rarely do we have a moment to reflect on the lenses through which we see the world. Belafonte's inspirational, multidimensional song, "Turn the World Around," reminds us of the importance of self-reflective work that is required of all of us before we can address real life problems in the world, "so together we can turn the world around." Our five-step process is flexible and dynamic, making it a practical tool for other classes and at other colleges and universities. As we increasingly become aware of the value of integrative thinking (Lumina Foundation, 2011), developing a framework for how introductory gateway courses can help students begin to learn the skills for solving complex problems that require an interdisciplinary integration of disciplines is important. We propose that our five-step process can contribute to this effort.

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New York. She lives in Oakland, California, where she raises chickens and grows food in her front yard.

Credit

"Turn the World Around" by Harry Belafonte and Robert Freedman Published by Clara Music Publishing Corp. (ASCAP) Administered by Next Decade Entertainment, Inc. All Rights Reserved. Used by Permission.

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