

Interdisciplinary Work at Andover: Purpose and Scope

Good learning occurs across Andover Hill.

From the dormitories to the athletic fields, from the Chapel to the Addison, from the sanctuary to the dining hall, from Brace to CAMD, from Foundations to Community Engagement, adults and adolescents are engaged in teaching and learning. Indeed, every moment at Andover seems ripe with pedagogical potential.

When we think of interdisciplinary work at Andover, however, we think primarily of the classroom and the academic program; those spaces that lie alongside and parallel to Andover's valued co- and extra-curricular efforts. In this statement of purpose and scope, we hope to outline a philosophy of interdisciplinarity at Andover and to ground interdisciplinarity in the core mission of the Academy, from the founding of the school through the 2014 Strategic Plan and its three pillars: equity and inclusion, creativity and innovation, and empathy and balance. All three pillars lie at the heart of both a good academic program and good interdisciplinary work.

Rationales

In his 1998 work, *Consilience: The Unity of Knowledge*, the biologist E. O. Wilson declares: "We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely."

Unbeknownst to him, Wilson channels the draft report of the 1977-1979 Curriculum Committee:

... [T]he quantity of information we presently possess about our experience is growing and changing at a rate that precludes the mastery by an individual of any major field of study. Even the task of maintaining a competent grasp of a specialized branch of a field of study is impossible without a steady commitment to keep abreast of new developments. ...[T]his influx of information has contributed to the creation of an intellectual era when no single network of concepts convincingly defines our relation to our experience and when fundamental conceptual reformulation is the rule and not the exception in the traditionally defined disciplines. In some cases, these very disciplinary definitions have been thrown into question. In the context of this explosion of information and this time of intellectual ferment, the capacity to think critically becomes vital.

Critical thinking is the exercise of mind of a person who has general understanding, not simply of specific patterns of reasoning, but of the nature of thought itself. Thinking of a rigorous, innovative and independent kind requires a self-conscious understanding on the part of the individual of how his mind functions and how this functioning is influenced by cultural context. A thinker

must be able to draw back from the immediate concerns of his position or understanding in order to see it in its entirety and in the context of his chosen method of approach. This perspective on how one's mind works, on the nature of the tools of language and conceptualization, the methods of investigation and models of explanation and expression offered by the various fields, on the aesthetic and moral values each thinker and his culture weave into his thinking must be acquired if responsible theoretical and practical judgments are to be made. In brief: critical thinking occurs whenever ideas and ideals are understood, evaluated and developed with an awareness of the standards and limitations built into the thinker's concepts, media of expression, methods of investigation, and models of explanation (Powell, et al.).

Nearly twenty years after Wilson published *Consilience* and nearly forty years after the Curriculum Committee shared its draft report, their observations and concerns are only more prescient as all the world's information seems to reside in every phone and their clarion calls for critical thinkers and synthesizers resound all the more.

No doubt, there are many ways in which students can become strong synthesizers of information, interrogators of knowledge, and discerners of meaning. One avenue for enhancing these skills and dispositions, various research during the last forty years suggests, is engaging students in interdisciplinary learning. Not only is there developing evidence that interdisciplinary learning helps foster the type of synthesis and critical thinking described above, but there is also developing evidence that it can help students to better recognize preconceptions and bias, see the validity of another's point of view, appreciate ambiguity, understand ethical considerations, and utilize creativity and innovation—all core components of Andover's mission and recent strategic plans (Kavaloski; Newell; Repko).

Engaging students in interdisciplinary learning also better prepares them to flourish in academic and professional landscapes that are increasingly interdisciplinary. As the National Research Council noted in its release of *Facilitating Interdisciplinary Research*, "Advances in science and engineering increasingly require collaboration of scholars across fields. This shift is driven by the urgent need to address complex problems that cut across traditional disciplines, and the capacity of new technologies to both transform existing disciplines and generate new ones." Moreover, engaging students in interdisciplinary learning as part of their secondary schooling better prepares them to engage with emerging interdisciplinary fields: American studies, applied physics, astrophysics, cognitive science, criminology, critical theory, cultural studies, ethnopharmacology, gender studies, genetics, gerontology, materials science, media studies, molecular biology, policy studies, and visual culture, among others. Because such interdisciplinary fields themselves are both increasingly expansive and increasingly specialized, they, too, require of us a greater critical discernment.

Anticipating and responding to the established benefits of engaging students in some interdisciplinary learning, the members of the 1977-1979 Curriculum Committee, the members of the 1996 Steering Committee, and the members of the 2014-2016 Intellectual Inquiry Working Group recommended making it a core component of the curriculum.

Definitions

At the start of her chapter exploring the intricacies and complexities of interdisciplinarity, Julie Thompson Klein, a leading scholar in the field, notes, “Any nomenclature, Kenneth Burke taught us, acts as a terministic screen that filters, directs, and redirects attention along some paths rather than others. Terminology is not only a reflection of reality. It is also a selection and a deflection” (*Humanities*). Klein goes on to explore the varying notions of interdisciplinary work. Some scholars, such as Lynn Hunt, maintain that “[a] good interdisciplinary conversation depends on a serious commitment to other disciplines as disciplines” and does not seek integration (*Humanities*). Steve Fuller’s understanding of interdisciplinarity takes a step farther and demands “interpenetration” while enforcing the boundaries between disciplines (*Humanities*). Other scholars, such as Giles Gunn, stipulate “that ‘genuine’ interdisciplinarity alters the constitutive question that generates interdisciplinary inquiry in the first place,” and Roland Barthes goes so far as to argue that “interdisciplinarity consists in creating a new object that belongs to no one” (*Humanities*).

Given that the vigorous questions and debates surrounding interdisciplinarity lie at the heart of the nature and structure of knowledge and understanding, it is prudent to adopt its most commonly understood definition, in place since 1970, and aptly captured by the members of the 1996 Steering Committee:

Generally speaking, interdisciplinary learning and teaching grow out of a view of knowledge and result in a curriculum that stresses connections between concepts and uses methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience (Rotundo, et al.).

At Andover, interdisciplinary learning places distinct disciplinary methodologies, concepts, and theories in active, sustained conversation and stresses connections with one another, and it can be facilitated in two primary ways. First, one or more teachers can carefully coordinate and reveal connectivity between two or more disciplines to the learners, who can then apply their understanding of such connectivity. Second, one or more teachers can present different disciplines separately and, via thoughtful and deliberate assignments, expect the learners to recognize connectivity and then apply their understanding of it. *Either way, the core component of any interdisciplinary experience has the student—the epistemological site of learning—place two or more disciplines in an active conversation that stresses connections.* Accordingly, the validity of this work is judged not by what the teachers are doing but by what the students are doing and thinking.

In order for students to adequately engage in interdisciplinary learning, they must first have a good grounding in disciplinary work; without it, they risk simplification and reductivism (J. Jacobs; Klein, *Humanities*; Rotundo, et al.). As students expand their learning towards interdisciplinarity, they may be well-served by first encountering an approach that places disciplines side-by-side but not in active conversation that stresses connectivity. Commonly defined as “multidisciplinary,” such an approach “juxtapose[s] disciplinary perspectives, adding breadth and available knowledge, information, and methods” (Klein and Newell). In a multidisciplinary approach, disciplines “speak as separate voices in an encyclopedic alignment.

The status quo is not interrogated, and disciplinary elements retain their original identity” (Klein and Newell). The multidisciplinary approach can be beneficial, yet by not interrogating the “status quo” of particular disciplines, multidisciplinary does not foster critical thinking—as defined by Powell, et al.—to the same extent as interdisciplinarity. Therefore, as we embark on our work, we embrace the concept of interdisciplinarity, as defined above.

Reverberations

Fostering the connection between knowledge and goodness lies at the heart of Andover’s mission. As stated in its Constitution: “though goodness without knowledge (as it respects others) is weak and feeble; yet knowledge without goodness is dangerous; . . . both united form the noblest character, and lay the surest foundation of usefulness to mankind.” This vision of citizenship, one with knowledge and with goodness, requires an education of synthesis, self-awareness, and critical discernment. It requires a “certain attitude toward the world and toward life, an attitude of inquiry, or questioning. Part of this attitude is a broad, deep curiosity, and part of this attitude is a healthy skepticism, a refusal to take things at face value” (Rotundo, et al.). It requires the skills and dispositions effectively imparted through good interdisciplinary work.

This Constitutional mandate does not, however, focus strictly on knowledge and goodness existing within the individual, an individual’s “character” and integrity. This union of knowledge and goodness also embodies the type of knowledge and understanding Andover seeks to create:

The ultimate purpose of obtaining knowledge is to achieve understanding, which is the ability to apply knowledge to illuminate new problems or unanticipated issues. In other words, knowledge is valuable not so much as an end in itself, but in its use, in its ability to increase an individual’s “usefulness to mankind” (Rotundo, et al.).

Interdisciplinary work not only imparts the skills and dispositions to ensure an “individual’s usefulness to mankind,” but it is also grounded in knowledge and understanding that helps humankind.

Although interdisciplinarity has its origins in the 1930s with the creation of American studies, it did not truly flourish until the 1960s, and the timing of its flourishing was no coincidence, as the university sought to influence the world outside. With the development of inherently interdisciplinary fields such as African American studies, gender and women’s studies, and queer studies, aspects of the university saw as their mission not only to understand the world but to also change it. This social engagement is not simply a remnant of the history of many interdisciplinary fields, but it also continues to define their purpose:

As far back as the late 60s and 70s, academics who have engaged in Black Studies have never simply acted as Ivory Tower scholars. We have always engaged in different ways, particularly because we believe it is important to be civically engaged . . . we work within a University structure that does not always understand the value of this kind of active engagement with the public . . . We

understand that knowledge gained in the classroom translates in the world in very concrete and practical ways, especially in terms of how we address problems of persistent racial inequality and other structural barriers that continually confront our communities” (Statement of the Department of African American Studies at Princeton University).

The outward focus of much interdisciplinary work, and its grounding in critical thinking, has enhanced our understanding of race-class-gender-sexuality, as well as notions of fairness and power, and broadened our perspectives in welcoming “youth from every quarter” and imparting “knowledge and goodness.”

All interdisciplinary work, however, not just that explicitly connected to race-class-gender-sexuality, has, at its core, interrogation of the status quo. When a geneticist discovers a means of anticipating the long-term quality of life a newborn might have, we must consider what “quality of life” means and who should determine it. When a mathematician develops new algorithms to more effectively mine “big data,” we must explore who will use the data and for what purpose. When a climate scientist realizes a climate history that influenced how people lived, we must challenge our prior interpretations of history. By emphasizing context and complexity, by connecting practice and principle, interdisciplinary work yields the skills of discernment critical to our rapidly changing world, and it educates “students to guide change in paths of goodness and wisdom and make a better world” (Rotundo, et al.).

Respectfully submitted to the Faculty by the members of the 2016-2017 Interdisciplinary Working Group:

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In December 2016, 77% of the members of the Phillips Academy faculty expressed “support” for this document, 19% indicated they were “unsure,” and 4% expressed a lack of support

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