Liberal Arts as Inspiration for Competencies Contributing to the Social Good

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As a Jesuit, liberal arts university located in the heart of Silicon Valley, Santa Clara has a unique opportunity to examine the challenge of what a liberal arts education can—and should—provide to a technology-heavy culture and to the various sectors of that society. Students completing increasingly popular majors in natural science, engineering, and business at Santa Clara are required to take classes in the liberal arts core. Analysis of some success stories can deepen understanding of how and why liberal arts classes animate students to find inspiration for individual development and fulfillment as well as aspiration for professional competencies supported by their majors that can be applied to the social good.

When Santa Clara University set out nearly ten years ago to revise the Core Curriculum requirements, faculty on the revision committee turned to the Association of American Colleges and Universities (AAC&U) for guidance. As the AAC&U web site explains,

Liberal Education is an approach to learning that empowers individuals and prepares them to deal with complexity, diversity, and change. It provides students with broad knowledge of the wider world (e.g. science, culture, and society) as well as in-depth study in a specific area of interest. A liberal education helps students develop a sense of social responsibility, as well as strong and transferable intellectual and practical skills such as communication, analytical and problem-solving skills, and a demonstrated ability to apply knowledge and skills in real-world settings.

The broad goals of liberal education have been enduring even as the courses and requirements that comprise a liberal education have changed over the years. Today, a liberal education usually includes a general education curriculum that provides broad learning in multiple disciplines and ways of knowing, along with more in-depth study in a major. (http://www.aacu.org/leap/what-is-a-liberal-education)
Always viewed as important for intellectual and personal development, liberal education is increasingly valued as fundamental to a well-informed electorate and essential to conscientious contributions to a global economy.

Consequently, when the new Core Curriculum launched in 2009, intentional, engaged, and integrated learning that would help students “develop a sense of social responsibility, as well as strong and transferable intellectual and practical skills such as communication, analytical and problem-solving skills, and a demonstrated ability to apply knowledge and skills in real-world settings” were key goals. The new Science, Technology & Society requirement, for example, aims to heighten awareness and knowledge among natural science, math, and engineering majors that social factors always influence and are influenced by science and technology. The requirement simultaneously aims to heighten awareness among social science, humanities, and arts majors that everything they study is permeated with factors related to science and technology. Courses satisfying the requirement build on more traditional math, natural science, and social science Core requirements and require students to demonstrate their ability to “analyze and evaluate the social impact of science and/or technology and how science and/or technology are themselves impacted by the needs and demands of society,” as one learning objective specifies.

The Core Curriculum also includes Values in Science & Technology as one of 24 Pathways students may complete. Terra Oldham, a mechanical engineering major who completed the Values in Science & Technology Pathway, reported shortly after graduation that her Pathway courses and reflection essay helped her discover “the importance of integrating the theories she studied in class with the societies and cultures that she would impact with her projects.” A Critical Thinking & Writing sequence Oldham completed in her freshman year
provided an introduction to the Pathway themes: "The class challenged us as students to see beyond just the numbers and really learn how to communicate effectively. Engineers sometimes have the reputation for not being able to communicate effectively, and that class illuminated the idea that developing a better sense of communication ties in with the values technology can bring to society." During her senior year, participation in the Solar Decathlon and a Solar House Design course provided Oldham with additional opportunities to connect her interests in engineering with her desire to relate them more effectively with social needs and values. "An engineering system can have a lot of value," she explains, "but you can make a much bigger difference when you integrate science and technology with social cues and culture. With the Solar Decathlon, we had to create a real, fully-functioning house. The design class was really good at exposing students to all the different facets that go into designing and building an efficient house that people can actually use." Now Oldham, an engineer in San Jose, will have opportunities to draw on her skills as a mechanical engineer and her understanding of cultural values and issues to contribute to the social good.

Henry Olson, an operations and information management systems major, provides a different example. The Design Thinking Pathway encouraged him not only to draw on a Core ethics course (a traditional element of liberal education) but also to explore relationships between engineering and information systems and pursue an employment/vocational path he might not have considered otherwise. Writing his honors thesis, which analyzed "the near future impacts of artificial intelligence on business," led him to understand that "there are so many papers out there about the specific technicalities of how artificial intelligence and the technologies that are being used in it are being developed. But there are fewer papers and studies around the impacts it's going to have on the business world and what it means for people and managers and government
officials." Henry took a developing topic in technology and looked at it from a business perspective grounded in understanding of ethical complexities and sensitivity to social good.

We propose that students like Oldham and Olson can help us understand how and why the combination of a liberal arts Core with professional competencies and skills gained in a major can animate students to find inspiration for individual development and fulfillment. Integration of growth as individuals and development of knowledge and skill leads to the integration of person and purpose, which can then be applied to the social good, as illustrated below:

We will use another example from the School of Engineering to illustrate how this diagram works because engineering is so skill-based and could appear to be as far from the liberal arts as possible.
 Individual development, or knowing oneself, is an important first step in connecting with the world’s needs – the “social good.” Discerning our own nature allows us a window into human nature and human needs. Students are invited to reflect on self in relation to society when they enroll in their first-year classes at Santa Clara. Each student is required to take two quarters of Critical Thinking and Writing (CTW) whose goals align with personal awareness and growth. Some topics for CTW sequences are Education & Identity, Academic Identity, Not All Who Wander Are Lost, Reading Food, Self, & Culture, Privacy, Gender & Identity, and Language & Identity. One CTW class this quarter, full of engineering students, provides an example. The professor assigned biographies of famous people in the sciences (e.g. Jane Goodall, Nikola Tesla, Alan Turing) and then asked the students to examine the life experiences of these individuals to see how they came to be who they were and choose the path that they pursued. The professor then invited a staff member from the career center to come to class and talk about the vocational journey and how one can look for “career clues” in one’s own life, facilitating exercises with the students to help them apply what they had found in the biographies to their own personal journey. Students can then see how people with similar skills (engineering) explore, and eventually take, different paths because of their unique character and inspirations. When the person brings their particular passion to a subject, it changes the path they take. The liberal arts core helps reveal “self” to each student while the major offers skills. In CTW classes like this one, students learn to connect self to subject, integrating their person and their purpose toward the needs of society.

We can then move on to look at the progression of an engineering student’s career and the effect and contribution of liberal arts classes as students begin to apply their skills. Courses satisfying the Core Ethics requirement all provide opportunities for students to “reflect on their
own ethical decisions and actions, on their roles as morally responsible members of the human community, and on what it means to be a good person.” The Frugal Innovation Lab offers students opportunities to apply what they have learned. Students working in this lab develop accessible, affordable, adaptable, and appropriate technologies, products and solutions to address human needs in emerging markets. Most of these needs are in marginalized communities with scarce resources. Faculty in the lab explicitly state that they combine engineering and empathy to produce solutions that people need. Undergraduate engineering students visit in person or speak with people in the communities who have expressed a need. The first job of the students is to clarify the need and how it could be appropriately addressed for that particular population or situation. They listen to people’s stories before they begin to imagine a solution. The application of their engineering skill is guided by what they learn from the story.

Another new Core requirement, Experiential Learning for Social Justice, increases the likelihood that all undergraduates will have similar opportunities to learn from community-based learning. Some students satisfy this requirement with immersion experiences, others with courses satisfying other Core requirements, such as Intermediate Spanish or Introduction to Social and Cultural Anthropology. For a course or experience to be approved as satisfying the Experiential Learning for Social Justice requirement, assignments must be designed to allow students to show evidence of the following learning objectives:

- Recognize the benefits of life-long responsible citizenship and civic engagement in personal and professional activities.
- Interact appropriately, sensitively, and self-critically with people in the communities in which they work and appreciate the formal and informal knowledge, wisdom, and skills that individuals in these communities possess.
• Recognize, analyze, and understand the social reality and injustices in contemporary society, including recognizing the relative privilege or marginalization of their own and other groups.

• Make vocational choices in light of both their greatest gifts and the world's greatest needs.

An important point is that the Core is designed to offer students multiple opportunities to be introduced to the learning we value and practice applying the learning in Core courses and courses for the major. Other Core courses also offer opportunities for natural gifts of empathy to flourish. For example, in Cultures & Ideas and Religion, Theology & Culture courses students read stories and study other texts that help them find meaning through their understanding of variations in individuals and cultures.

As human beings, we connect with others most deeply through their stories—much more than through their skill sets. When courses in the humanities provide access to stories that are different from our own, we begin to see the world more broadly; the stories awaken us to society’s needs. A liberal arts core curriculum increases the likelihood that engineering students will have reached a stage of integration when they are ready to begin working on an engineering solution, as shown in the diagram. When the person, their skills, and their sense of purpose and passion (ignited by the liberal arts) are ready to focus on what their particular population needs – they are likely to address the social good.

This integrated expression of purpose in our lives is what Tom Rath and Jim Harter describe as “wellbeing” in their book by the same name. In their collaboration with a Gallup study of 150 countries, the authors discovered 5 essential elements across cultures that provide an abiding sense of wellbeing in our lives. They write, “Wellbeing is about the combination of
our love for what we do each day, the quality of our relationships, the security of our finances, the vibrancy of our physical health, and the pride we take in what we have contributed to our communities.” Our commitment as educators is to cultivate an emerging sense of purpose in our students as they search for meaningful applications of their skills, interests, and education in many facets of their lives. Purpose is fed by applying skills to society; the liberal arts core is often where the cultivation of purpose begins. When we can facilitate students’ sense of purpose, we can help them experience success outside the realm of salary. In his book *Drive*, Daniel Pink writes, “We know that the richest experiences in our lives aren’t when we’re clamoring for validation from others, but when we’re listening to our own voice – doing something that matters, doing it well, and doing it in the service of a cause larger than ourselves.”

Perhaps as important as understanding why and how students derive inspiration from liberal learning is understanding why not all students demonstrate this growth. What are the barriers that prevent some students from seeing the explicit connections between learning in their majors and their Core requirements, between their personal and intellectual growth, or between their current and future employment and the social good? Several Network for Academic Renewal conferences recently advertised by AAC&U suggest there is a national interest in exploring answers to this question.

Even though Santa Clara University advertises its Jesuit, Catholic mission and values (“men and women for others”; “Santa Clara University will educate citizens and leaders of competence, conscience, and compassion and cultivate knowledge and faith to build a more humane, just, and sustainable world”) prominently, many students select our school because of our reputation for career success measured by salary and prestige. Other students are more drawn by the beautiful campus, awesome weather, and opportunities for community and friendships.
Some researchers have argued that a key role of undergraduate education is to keep young people out of the workforce for four or more years while they mature. The four years can offer enough time for students to enjoy community, mature socially, and then buckle down to complete a major that they hope will open the door to a lucrative career or post-graduate education and an even more lucrative career.

Hence, not all students come to Santa Clara pre-disposed to benefit from convergences between liberal learning and whatever major they select. Education of parents may be an important component of educating undergraduates. Fortunately, the barrage of media reports undervaluing liberal education is being met now with more and more evidence to the contrary. For example, a January 12 article in US News and World Report, “Thinking Outside the Box: Our tech-driven future needs the skills of liberal arts graduates,” may help parents of undergraduates better understand the importance of a liberal arts core curriculum and, perhaps, of majors in the humanities. In this article, Tuajuanda C. Jordan cites Nobel laureate chemist Thomas R. Cech, who reports in his paper "Science at Liberal Arts Colleges: A Better Education?" that a National Academy of Sciences survey “found that almost one-in-five scientists elected into the National Academy of Sciences received their undergraduate degree from a liberal arts college” even though “only 3 percent of all college graduates were educated at such an institution.” According to Jordan, “Cech attributes the success of liberal arts science students to two features of a liberal arts education: the nurturing environment and the cross-training between science and the humanities” (http://www.usnews.com/opinion/articles/2015/01/12/why-a-tech-driven-economy-needs-the-liberal-arts). Thus, while reports of declining humanities majors abound, reports about the value of the humanities to students in science and technology majors are more and more common.
In addition to student and parent beliefs and predispositions, training and beliefs of faculty may inadvertently create avoidable and unintentional barriers. Throughout the 20th century graduate education emphasized and rewarded narrow specialization, often with little or no attention to the importance of other disciplines to understanding of their areas of research and writing. Although interdisciplinary, multidisciplinary, and cross-disciplinary research and teaching are receiving much more attention in the 21st century than in the past, institutional structures often encourage competition across departments more than collaboration. Anecdotal evidence suggests some faculty actually compete for majors by articulating negative views of other disciplinary approaches in their classrooms. Some faculty report having encountered institutional barriers to collaboration supporting integrated, engaged, and intentional learning.

Resources to support faculty development are more readily available to tenure-stream faculty, who may be more focused on research and writing than pedagogical experiments, than to lecturers, who teach a large proportion of courses students complete during their first two years. AAC&U schedules regional conferences to make it more likely faculty will have adequate resources to participate.

Santa Clara University has developed faculty development resources to address these challenges more directly. For example, the CAFE (Collaborative to Advance Faculty Excellence), a series of lunchtime conversations about teaching, “aims to serve Santa Clara faculty by providing a site for regular conversation about teaching practices. In themed discussions on a wide variety of teaching topics, faculty members share what they are doing and explore new ways to foster student learning” (www.scu.edu/provost/facultycollaborative/cafe/).

One recent CAFÉ was on STEM and convergence. Another, “How Students Learn: Modalities of Engagement,” invited faculty to discuss roles of emotion and engagement in the likelihood that
students will remember what they have learned and be able to apply their learning to problems or challenges in other situations. Although these faculty development opportunities do not address social good directly, they are concerned with the predispositions and encouragements that are likely to contribute to the learning we discuss in this paper.

At least as important are faculty-staff-student collaborations designed to make students aware as early as possible of the importance of the search for meaning through exploration and the search for need identified in our diagram earlier in this paper. The Critical Thinking & Writing sequence that draws on expertise in the Career Center for exploration of vocation and identity is one example. Courses linked to residential learning communities (RLCs) provide further opportunities for student leaders (Community Facilitators) RLC staff (Resident Directors and Resident Ministers), and faculty to collaborate. A Religion, Theology & Culture course linked to a RLC provides multiple opportunities because the Faculty Director of the community, who teaches the class, encourages all of the writing instructors teaching linked courses and other faculty to develop extracurricular activities that encourage a search for meaning. In every RLC, faculty, staff, and student leaders work together to provide a range of living-learning activities that enhance civic engagement and responsibility and enhance personal growth. As you can imagine, the residence halls provide ample opportunity for students to learn through experience negative effects of some of their choices and for student leaders to model the search for meaning and the search for need.

In the late 1770’s, Thomas Jefferson proposed “A Bill for the More General Diffusion of Knowledge” wherein he states that “those persons, whom nature hath endowed with genius and virtue, should be rendered by liberal education worthy to receive, and able to guard the sacred deposit of the rights and liberties of their fellow citizens.” Over 200 years later and 3,000 miles
distant, Santa Clara University echoes the worth of Jefferson’s proposal in its core curriculum based on the liberal arts and its emphasis on social justice and social good, encouraging students and graduates to “guard the sacred deposit of the rights and liberties of their fellow citizens.” Jefferson clearly saw a connection between a liberal education and the social good and we affirm that his sentiment is yet true.