**WORKING DRAFT**

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**General Education for an Information Society**

**By**

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The general education curriculum as we know it today is a product of the Industrial Revolution. In *The Meaning of General Education* (Miller, 1988), I tracked the history of the idea of the general education curriculum from its 19th century origins through twentieth century innovations in response to the World Wars and the Cold War.  The innovations that define the Information Revolution are continuing to spark changes to society that are perhaps even more profound than those of the industrial era.  This piece will explore how the Information Revolution is creating new demands of education and how we might best articulate the role of general education in the 21st century’s global information society.

**Looking Back:  General Education in the Industrial Era**

Before the Industrial Revolution, the American college served mainly to produce ministers and civic leaders.  Its curriculum was based in the classical liberal arts, what the Yale faculty in their famous 1828 report called “the discipline and furniture of the mind” (Yale University Faculty, 1828/1961, p. 285).  However, as the Industrial Revolution matured in the nineteenth century, other needs arose, and American higher education responded in several ways:

* American academics began to go to German research-oriented universities to earn their doctorates and returned with new interests in research, which stimulated interest in new disciplines and, by extension, changed how both faculty and curricula were organized within the institution.
* New interests in specialized areas of knowledge led to the growth of academic libraries.
* Industrialization created a demand for professionals in new field—engineering and business management, for instance—and universities responded by creating undergraduate and graduate programs in these new areas.
* New industries also stimulated a dramatic increase in immigration to the U.S.; the state governments responded by funding new higher education institutions—normal schools—to train teachers to serve the children of these new citizens.
* Rapid urbanization also created a concern that the nation’s farmers would not be able to feed the growing urban population.  In response, the federal government funded land grant colleges and new agricultural research and education programs, further diversifying the curriculum and fostering the development of Agricultural Extension Services in the new land grant colleges.
* The experience of immigration, urbanization, and industrialization stimulated the development of new research arenas—sociology and social psychology, for example—which also stimulated the diversification of the university’s research mission, new public institutions, and, in the process, new curricula.

As higher education developed around new research and professional disciplines, general education evolved as well.  While general education maintained some of the elements of the old liberal education, it increasingly became the “breadth” component of an undergraduate degree that was focused increasingly on narrowly focused professional and research majors.  The goal of general education in this new era became to introduce key knowledge in a broad array of subjects, helping students to make a final choice of major and, in the process, providing some “furniture of the mind” for their role as members of the broader society.  The result was the “distribution” approach to the undergraduate curriculum, with the traditional humanities-based liberal education being taught largely through a series of introductory courses--literature, history, math, science, social science, philosophy, etc.—taught from within in the discipline-based academic departments.

One of the early advocates for innovation in general education was John Dewey. In his 1915 book, *Democracy and Education,* Dewey emphasized the idea that education, while it may use materials from the past, is *about* the present.  Noting that "an individual can live only in the present," Dewey argued:

The study of past *products* will not help us understand the present, because the present is not due to the products, but to the life of which they were the products. A knowledge of the past and its heritage is of great significance when it enters into the present, but not otherwise. And the mistake of making the records and remains of the past the main material of education is that it cuts the vital connection of present and past, and tends to make the past a rival of the present and the present a more or less futile imitation of the past (Dewey, 1915, p.75).

"The present, in short," Dewey added, "generates the problems which lead us to search the past for suggestion, and which supplies meaning to what we find when we search" (p. 76).  This led Dewey to a "technical definition" of education:  "It is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience" (ibid.).

John Dewey’s instrumentalist philosophy influenced the general education curriculum at Vermont’s Bennington College, which opened in 1932 with the first two years focused on helping students find their real interests and talents through a curriculum that used problem solving projects and experiments appropriate to the various subject areas.

Another innovation in the 1930s was the Experimental College, created by Alexander Meiklejohn at the University of Wisconsin with the goal, as Meiklejohn described it, of “the building up of self-direction . . . trying to create or cultivate intelligence, capable of being applied in any field of scholarly work” (Meiklejohn, 1932, p.10). The primary task, he wrote, was “the education of common men . . .in terms of the kind of thinking which all men are called upon to do in the enduring relations of life” (Miller, p. 45).

The Great Books Program at the University of Chicago evolved out of what the university’s President Robert Maynard Hutchins described as a “permanent studies” curriculum based on the premise that “it is impossible to understand any subject or to comprehend the contemporary world” without understanding the ideas contained in the great books of western civilization (Miller, p. 53). "If we can know nothing about society," he wrote in 1941, "if we can have only opinion about it, and if one man’s opinion is as good as another’s, then we may decide to get what we irrationally want by the use of irrational means, namely force” (Hutchins, 1941, p.31).

The move toward materialism had very direct implications for higher education, in Hutchins' view.   ". . .The aim of education is wisdom and goodness," he wrote, adding, "Studies that do not bring us closer to this goal have no place in a university .  .  . If you deny this proposition, you take the responsibility of asserting that a rational view of the universe and one's role in it is no better than an irrational one or none at all" (Hutchins, 1941, p. 26-27).  The implications for the curriculum were clear:  "If, then, we are to have standards of social criticism and social action, and if they are to be anything but emotional standards, they must result from philosophical and historical study and from the habit of straight thinking therein" (p. 29).

Ultimately, the goal of education was to find meaning for the individual’s role in society and for the ideals that hold society together. As Hutchins put it, "The alternatives before us are clear. Either we must abandon the ideal of freedom or we must educate our people for freedom" (Hutchins, 1941, p. 17).

**The Cold War Response** The end of World War II introduced a new environment that would soon see America in an ideological competition with the Soviet Union—the Cold War—as well as the first forays into the Information Revolution. President Truman created a Commission on Higher Education that, in its 1947 report, identified eleven principles or goals that summed up key characteristics of an educated person on the eve of the new era:

·      An ethical code of behavior

·      Informed and responsible citizen solving problem skills

·      Understanding global interdependence

·      Habits of scientific thought in personal and civic problems

·      Understanding others and expressing one’s self

·      Enjoyment and understanding of literature and the arts

·      The ability to create a satisfying family life

·      The ability to choose a useful and satisfying vocation

·      Developing critical and constructive thinking habits

These were ways in which higher education was expected to contribute to the quality of life in American society that went beyond simple preparation for a career (Kennedy, 1952, pp. 25-30).

**The Information Revolution and Globalization**

By the time the Truman Commission had finished its work, the roots of the Information Revolution had already taken hold.  While the Industrial Revolution began as a transportation revolution—steam-powered ships and railroads—the Information Revolution began as a communication revolution.  The first television station went on the air as early as 1928, and the first computer came in 1938.  However, the real revolution was sparked by the ability to network media.  The Soviet Union launched Sputnik—an experimental communications satellite that sent radio signals back to earth—in 1957; cable television, which first emerged in 1950, had moved to microwave networks by the early 1970s; public television and other national media networks moved to satellite in 1979.  When Mosaic, the first web browser, was developed at the University of Illinois in 1992, the old industrial society was already being transformed into a global information society.

            In 2000, Thomas Friedman published an expanded edition of his 1998 book, *The Lexus and the Olive Tree*, which looked at the ways in which globalization was replacing the Cold War as the dominant organizing principal of international politics, economics, and culture.  Writing two decades ago, Friedman described an emerging new world order.  “Globalization,” he wrote, “is not just some economic fad, and it is not just a passing trend.  It is an international system—the dominant international system that replaced the Cold War system after the fall of the Berlin Wall” (Friedman, 2000, p. 7).  Friedman defined “globalization” this way:

“. . . it is the inexorable integration of markets, nation-states and technologies to a degree never witnessed before—in a way that is enabling individuals, corporations and nation-states to reach around the world farther, faster, deeper and cheaper than ever before, and in a way that is enabling the world to reach into individuals, corporations and nation-states farther, faster, deeper, cheaper than ever before” (p. 9).

Globalization is different from the old Cold War era in several ways.  Friedman noted that, while the most frequent question in the Cold War era was “Whose side are you on?” the most frequently asked question in the global world is, “To what extent are you connected to everyone?” (p. 10).  Innovation replaces tradition.  The present/future replaces the past.  “Nothing matters so much as what will come next, and what will come next can only arrive if what is here now gets overturned” (p. 11).

            Friedman paraphrased German political theorist Carl Schmitt, writing, “the Cold War was a war of ‘friends’ and ‘enemies.’ The globalization world, by contrast, tends to turn all friends and enemies into ‘competitors’” (Friedman, 2000, p. 12). During the Cold War, influence and security were based on the power of the nation state.  In this new age, however, the power of nation states has been replaced by the power of association.  Friedman argued that the new society was powered by three ‘balances’:

·      The traditional balance of power between nation states.

·      The balance between nation states and global markets.

·      The balance between individuals and nation states.

Friedman saw the last of these balances as the key:

“Because globalization has brought down many of the walls that limited the movement and reach of people, and because it has simultaneously wired the world into networks, it gives more power to individuals to influence both markets and nation-states than at any time in history” (p. 14).

Almost two decades later, Friedman took a fresh look at the ongoing social revolution. In 2016’s *Thank You for Being Late,* he explored how both technological change and social change had influenced society since the 1990s.  He observed that technological change evolves rapidly, doubling its power and reach every few years.  The result is “a tremendous release of energy into the hands of human beings to compete, design, think, imagine, connect, and collaborate with anyone anywhere” (Friedman, 2016, p. 83).  However, Friedman also noted that *social* change takes place at a much slower pace than *technological* change.  At some point, the speed of technological change outpaces our ability to adapt to it, creating social disruption and leaving some people behind as others race to catch up.

Another perspective on the impact of technology was expressed in 2009 by William Irwin Thompson. In *Transforming History* (2009), Thompson wrote,

A technological innovation is itself deeply embedded in various systems of values and symbols; a new tool can emerge synchronous with a new form of polity, as well as with a new form of spirituality. Cultural history, as opposed to the more linear history of technology, is concerned with the complex dynamical system in which biological natural drive, ecological constraints, and systems of communication and social organization all interact in a process of “dependent co-origination” (p. 16)

**Elements of the New Environment**

Several aspects of social change brought on by the Information Revolution need to be considered as we look at the role of General Education in this new era:

**Acceleration**  Accelerating change can be seen as a characteristic of the new age. “Acceleration,” Alvin Toffler wrote in 1970’s *Future Shock*, “is one of the most important and least understood of all social forces” (Toffler, 1970, p. 32).  For Toffler, acceleration was not just a technological or social force, but a psychological force.  “The rising rate of change in the world around us,” he wrote, “disturbs our inner equilibrium, altering the very way in which we experience life.  Acceleration without translates into acceleration within” (ibid.).  Noting that the faster rate of change creates a new kind of information system in society—one that gives smaller groups more power to affect change—Toffler argued that “to master change, we shall therefore need both a clarification of important long-range social goals and a democratization of the way in which we arrive at them” (Toffler, 1970, pp. 476-77).

            As Friedman noted, the gap between technological change and social adaptation to that change is always increasing.  In order to keep pace with technology-related change, he argued, we need to innovate “in everything other than technology.”  That involves a dramatic re-thinking of the social environment:

“It is reimagining and redesigning your society’s workplace, politics, geopolitics, ethics, and community—in ways that will enable more citizens on more days in more ways to keep pace with how these accelerations are reshaping their lives and generate more stability as we shoot through these rapids” (2016, p. 199).

**Redefining Community**The Information Revolution also has eliminated geography as a limitation in human interactions.  The web allows us to interact simultaneously with our next-door neighbor and colleagues around the world.  In the process, it has re-defined how we think about “community.”  This has broad implications not only for how individuals relate to each other and their work, but to our ideas about fundamental aspects of how we relate to others.  Wendell Berry has made the question of localism a focus of his work for many years; in *Sex, Economy, Freedom, and Community,*he described the idea of *community* this way: “…community is a locally understood interdependence of local people, local culture, local economy, and local nature” (Berry, 1993, p. 120).  In *It All Turns on Affection: The Jefferson Lectures and Other Essays,* he delved more deeply into the role of community in the lives of individuals:

For humans to have a responsible relationship to the world, they must imagine their places in it.  To have a place, to live and belong in a place, to live from a place without destroying it, we must imagine it.  By imagination we see it illuminated by its own unique character and by our love for it.  By imagination we recognize with sympathy the fellow members, human and nonhuman, with whom we share our place.  By that local experience we see the need to grant a sort of pre-emptive sympathy to all the fellow members, the neighbors, with whom we share the world.  As imagination enables sympathy, sympathy enables affection.  And in affection we find the possibility of a neighborly, kind, and conserving economy. (Berry, 2012, pp. 13-14)

The challenge in the global information society is to achieve that same “affection” and identity in a society where community is no longer defined by geography.

Another way to think about the role of community in our lives is the “expanding communities” model of social development.  It assumes that, over the history of human existence, humans have had to expand their understanding of their relationship with the world.  It is a cultural process that mirrors what we all go through as we mature.  As small children, our immediate family is our community.  As we grow, that expands to our neighborhood, our school, our town, and, eventually, we become part of broader communities—our state, our nation, our region, etc.  With each step, we assume a broader *public* identity and *personalize* or *privatize* the older identity.  Increasingly, those broader communities also include international professional relationships, global supply chains, and other strategic relationships.

This is a central issue in preparing individuals to be effective citizens in a globalized information society. The Information Revolution, by removing locality as a unique defining element of our individual identities, has created a new challenge for one’s sense of belonging to a community.

This, in turn, should have a significant impact on how we think about general education.  How, in this global economy, can we create affection—a “pre-emptive sympathy” – for our local community and the neighbors who live in it with us?  How do we do the same with non-local communities?  How should we imagine our “place” as individuals, professionals, and members of both virtual and location-based communities in this new environment?

**A New Relationship with Time**Just as the Information Revolution eliminated space as a limitation to communication, it is dramatically changing our relationship to time.  For instance, the Internet gives individuals increased control over when and how we respond to communications.  Conversations can be “synchronous” or “asynchronous.”  In *Present Shock* (2013)*,*Douglas Rushkoff noted that, when we use smart phones and other hand-held devices for email, “we turn a potentially empowering asynchronous technology into a falsely synchronous one” (Rushkoff, 2013, p. 99).  This reinforces the idea of “multi-tasking,” even though research suggests “the basic fact that human beings cannot do more than one thing at a time” (p.123).  Rushkoff adds:

Yet the more we use the Internet to conduct our work and lives, the more compelled we are to adopt its processor’s underlying strategy.  The more choices are on offer, the more windows remain open, and the more options lie waiting” (p. 124).

**Shared Consciousness**In *Future Shock,* Alvin Toffler looked at the changes that were already looming as the Information Age reached its first maturity in the 1970s.  “As interdependency grows,” he wrote, “smaller and smaller groups within society achieve greater and greater power for critical disruption” (Toffler, 1970, p. 477). Four decades further into the Information Age, Douglas Rushkoff observed in that, in this new environment, “thinking is no longer a personal activity, but a collective one” –something he called “the shared consciousness” (Rushkoff, 2013, p. 204).

In the same vein, Friedman argued that “our very notion of ‘community’ has to expand to the boundaries of the planet” (2016, p. 352).  He quoted author and businessman Dov Seidman that the goal must be “. . .  to forge healthy, deep, and enduring interdependencies—in our relationships, in our communities, between businesses, between countries—so that we rise, and not fall, together” (ibid.). Understanding those interdependencies is a key to success in the new environment.

**Educational Innovation**  As educational institutions innovate to adapt to social and technological change, the results could also have an impact on how colleges and universities design their general education curricula.  One example is the gradually growing demand for universal K-14 education.  Just as the Industrial Revolution raised the educational norm to make high school graduation a general expectation by early in the twentieth century, the twenty-first century is seeing growing pressure that all young people should take at least two years beyond high school.  In 2017, New York State responded to this with the Excelsior Scholarship, which funds the costs of the first two years tuition in public colleges and universities for New York residents who live in households that earn less than $125,000 per year. As Gary Rivlin noted in the [New York Times Magazine](https://www.nytimes.com/2017/05/16/magazine/should-students-get-grades-13-and-14-free-of-charge.html)*:*

Finishing high school might once have provided enough education to find employment that pays well. But globalization and automation are decimating those jobs. Even manufacturing work that remains in (or returns) to America requires knowing how to operate the computers that run today’s factory floors, at least if you expect to earn anything close to a living wage. . .  Making 14th grade the new 12th grade might be essential if the United States is to maintain its status as an economic powerhouse. (Rivlin, 2017, para 4)

            Virginia joined New York in this movement in 2019.

A similar need has driven the “dual enrollment” movement, in which a student’s participation in a course simultaneously earns college credit as well as high school graduation credit.

**Open Educational Resources** One contributor to this movement to re-align curricula is the accelerating power of technology.  In recent years, institutions have begun to create—and, more importantly, to share—a wide variety of online course materials, from lectures and demonstrations to full textbooks as open educational resources (OERs).  Through OERs, faculty are able to reduce costs for students, share content across institutions, and give student a greater library of resources to use in courses focused more on application of knowledge to solve problems.

**Micro-credentials** Also called “badges,” micro-credentials allow institutions to formally recognized content learned after graduation or otherwise beyond the traditional curriculum. They are becoming a means by which institutions can maintain a life-long relationship with students. The growth of this movement suggests the potential for a post-graduate general education component.

**A New Context for General Education**

These changes are creating a new social context for higher education.  Increasingly, the goal is to prepare individuals to function as citizens and professionals in an increasingly diverse environment in which their local community and social organizations must operate within the context of global interdependencies.  We see it in the international supply chain for both manufactured and agricultural products.  We see it in the increasing migration of people for both environmental and political reasons, whether it be refugees from Latin America to the United States or from the Middle East to European nations.  We see it in the number of international students who come to U.S. colleges and universities to learn skills that they can take back home after graduation (just as American scholars went to study in Germany in the years after the American revolution). We see it in the increasing demand for innovation in technology, medicine, and other fields that drive changes in both research and professional education.  We see it in the demand for lifelong access to continuing higher education as adults try to keep pace with innovation in their professions.  In this age of acceleration, the question of how we prepare individuals to function in a rapidly changing society has become urgent.

**Defining General Education in the Information Society**

General education has long been seen as a problem area in the Information Age.  As early as 1977, the Carnegie Foundation for the Advancement of Teaching declared it a “disaster area” (Gaff, 1994).  By the 1980s—when the impact of the Information Revolution on daily life was beginning to be felt—several national reports decried the disarray in the undergraduate curriculum.  One, sponsored by the National Institutes on Education, argued that excessive vocationalism had weakened the ability of a baccalaureate degree to “foster the shared values and knowledge that bind us together as a society” (Scully, 1984, p. 1).

In 1999, the National Association of State Universities and Land Grant Colleges and the Kellogg Foundation charged a Commission led by 24 public university presidents and provosts to look at the future of public higher education in the Information Age.  The result was a series of six reports, under the general heading *Returning to our Roots*.  The final report noted:

“The mission of our institutions has not changed, but the context in which we pursue it is in every way different. Just as surely as the dawn of the 20th century marked the American transition from agriculture to manufacturing, the 21st will usher in the full flowering of the information and telecommunications age.”  ([Renewing the Covenant](http://www.aplu.org/library/renewing-the-covenant-learning-discovery-and-engagement-in-a-new-age-and-different-world), 2000, p. 16).

The problems remain. A 2020 *Survey of College and University Chief Academic Officers*, conducted by *Inside Higher Education*, found that, while the vast majority of provosts agree that “a liberal arts education is central to undergraduate education—even in professional programs” and 91 percent agree that “general education is a crucial part of any college degree,” citation only 25 percent agree that students understand the purpose of general education and many, especially at public four-year institutions, are inclined to agree that general education requirements have become too expansive.

The question remains: What should be the role of general education in this new and constantly changing context?

In 1994, the American Association of Colleges sponsored a Project on Strong Foundations for General Education.  Project Director Dr. Jerry Gaff noted,

The term “general education” used throughout this monograph admits of no simple—or single—definition. A heuristic one offered by an earlier report (Task Group on General Education, 1988, 1) is “the knowledge, skills, and attitudes that all of us use and live by during most of our lives—whether as parents, citizens, lovers, travelers, participants in the arts, leaders, volunteers, or good Samaritans.” While avoiding advocacy of any particular content, this definition has the advantage of inviting individuals into a conversation, so that a group, such as a college faculty, can determine what are the essential knowledge, skills, and attitudes for students to acquire. If agreement can be reached, then the group can assess the adequacy of a curriculum to cultivate such qualities, or devise a curriculum that would more intentionally nurture those attributes. (p. 1-2)

The AACU report goes on to describe six principles that should guide institutions as they create general education curricula in the new environment:

Principle #1: Strong general education programs explicitly answer the question, “What is the point of General Education?”

Principle #2: Strong general education programs embody institutional mission.

Principle #3: Strong general education programs continuously strive for educational coherence.

Principle #4: Strong general education programs are self-consciously value-based and teach social responsibility.

Principle #5: Strong general education programs attend carefully to student experience.

Principle #6: Strong general education programs are consciously designed so that they will continue to evolve.

Writing in the [*Washington Post*](http://www.washingtonpost.com/opinions/our-unprepared-graduates/2011/09/30/gIQAJGYBBL_story.html) in 2011, Kathleen Parker noted a study, *Academically Adrift:  Limited Learning on College Campuses,* in which Richard Arum and Jospia Roksa reported that “Gains in critical thinking, complex reasoning and writing skills are either ‘exceeding small or nonexistent’ for a larger proportion of students” and that “thirty-six percent of students experience no significant improvement in learning (as measured by the Collegiate Learning Assessment) over four years of higher education” (Para 7, 8). Part of the problem, Parker suggested, is the erosion of the core curriculum.  That suggests that the problem is not simply that the core subjects are no longer being taught, but that, when they are taught, they are taught out of context—as simply introductions to the disciplines—rather than as skills one needs to be successful as an individual and as a citizen.

As the AACU report suggests, the key to improving the curriculum is not simply to focus more on the major areas of study, but to examine the total experience and to develop a unique General Education curriculum that prepares students to be socially responsible professionals and citizens in a new, rapidly evolving social context.  A new approach to pedagogy is part of the solution.  A new approach to the economics of undergraduate education that will allow for a more integrated general education curriculum to be organized beyond the traditional disciplines may also be needed. It is well-past time for the re-envisioning of General Education to be treated as an institution-wide issue.

**Civic Engagement as a Goal**

In 2012, [*The Crucible Moment:  College Learning and Democracy’s Future*](http://www.aacu.org/civic_learning/crucible), a report of The Civic Learning and Democratic Engagement National Task Force, cited the Truman Commission in making its case for re-committing higher education to a curriculum that ensures a “socially cohesive and economically vibrant U.S. democracy and a viable, just global community.”  This goal, notes the report, “will requirethat **civic learning and democratic engagement** not be sidelined but central, not an afterthought but an anticipated and integral part of K-12 and college education” (p. 20).

*Crucible Moment*defines civic-minded campuses as having four characteristics:

“. . . such campuses are distinguished by a ***civic ethos*** governing campus life, ***civic literacy*** as a goal for every graduate, ***civic inquiry*** integrated within majors, general education, and technical training, and informed ***civic action***

done in concert with others as lifelong practice” (p. 31).

**Collaboration as a Basic Social Skill**

The continuing acceleration of the global economy is also changing how we work.  Increasingly, work tends to get done by teams. Often, these are virtual teams with members at multiple locations.  This work environment puts greater emphasis on collaboration rather than individual competition.  Similarly, rapid changes in knowledge require an environment of continual, bottom-up innovation.  Collaboration and innovation are both professional and civic skills that need to be taught.  Even on the most informal level—as evidenced by Facebook and Twitter today—students need to develop a social ethos to guide how they interact with social networks so that they can develop and sustain professional, civic, and personal relationships through both face-to-face and virtual networks.

An underlying feature of the Information Society is that technology has removed geography as a delimiting factor in how we live and work in *communities.* Members of an Information Society live and work in distributed communities that accomplish much of their work through technology.  This includes virtual working teams, professional associations, and a wide variety of social networks.  The boundaries of these communities tend to blur, as people include both social and professional contacts in the same network.  Inter-cultural understanding takes on a new immediacy: every culture is potentially present in our virtual communities.  General Education, with its emphasis on educating the student for success within the context of his/her society, can help individuals define how to conduct themselves in these new communities.

**A New Pedagogy**

The Information Revolution has changed the way we think about knowledge and information.  Today, information is ubiquitously available on the web.  In this environment, education is less about the transfer of already organized knowledge than about how to find and evaluate information and turn it into useable knowledge that can be used to solve problems, to innovate, and to provide meaningful insights.  Active inquiry, as a result, becomes both a means and an end of General Education--a core skill of the new curriculum.

 Social activist Grace Lee Boggs, writing in 2011, quoted Brazilian activist and philosopher Paolo Freire that “The future isn’t something hidden in a corner. The future is something we build in the present” (Boggs, 2012, p. 147). She called for a problem-focused approach to education, noting Freire’s argument that “critical thinking can develop only when questions are posed as problems” (Boggs, p. 148).

            Knowledge creation, collaboration, innovation, and community building are workplace and civic skills that should be incorporated into General Education for the Information Society. The challenge of General Education in this new environment is:

·      To develop lifelong learners who can create knowledge

·      To instill problem-solving and innovation as both workplace and civic skills

·      To develop the skills of collaboration across cultures and across geography

·      To help students understand the nature of the communities in which they live and work so that they can become effective members of these communities.

This suggests that the next generation of General Education should not just be a new collection of courses, but courses and other experiences guided by a common pedagogy designed to engage the students in the above goals, regardless of the disciplines being studied.  This new General Education pedagogy should be resource-centered, inquiry-based, and problem-oriented and, perhaps, better integrated with the professional studies part of the undergraduate curriculum.  It should also encourage students to use online technology to collaborate to find information, evaluate it, and turn it into useful knowledge, and then apply that knowledge to solve problems.  These are key elements in preparing students for life in an Information Society.

One new pedagogy that is gaining attention in the online learning community is the [Community of Inquiry](http://communitiesofinquiry.com/) (<http://communitiesofinquiry.com/model>).  This approach maintains that the educational experience is the intersection of three factors:  social presence, cognitive presence, and teaching presence.  *Social presence* is “the ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities” (Garrison, 2009).  *Teaching presence* is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001).  *Cognitive presence* is the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse (Anderson, Rourke, Garrison, & Archer, 2001).  All three factors should be used to engage students in a general education curriculum.

**Elements of a New Approach to General Education**

Christopher Beha, editor of *Harper’s* magazine, wrote that what makes the job of editing a magazine like Harper’s a challenge in today’s environment is “the need to constantly ask ourselves what will matter to readers months and even years from now” (Beha, 2020, p. 4). The same could be said of educators at all levels, but especially those involved in general education. Most courses in a student’s major can be justified by their direct application to the profession for which the student is preparing. General education, on the other hand, is just that—general. At one time, one might have argued that general education—or liberal education as many called it in the old days—was specific in that it provided the core knowledge that defined western civilization. Today, however, we no longer live in western civilization, but in a highly interconnected global society. We should ask, “what will matter to *students* months and even years from now?” as they make their way into an increasingly global, technological society marked by accelerating change.

One might argue that some things—the canon of Western civilization, for instance—have not changed. However, while some things have not changed, others have.  There are many reasons why education today has become so focused on material benefits--on preparing people for work.  Not the least is that we no longer live in a world of nation states, but instead in a global economy where technology has eliminated many geographic boundaries, so that competition for talent has never been greater. American society needs a better trained workforce in order to compete for jobs at all levels. That said, if Hutchins was correct that every act must be judged as a moral act, not an economic act, then we must also prepare our citizens for moral action in the increasingly complex culture in which the new work takes place.  How do we use the lessons of the past to inform present and future actions?  How do we educate people so that they can maintain a free and open society in the midst of accelerating change?

A first step is to free the general education curriculum from the discipline-centered "breadth and depth" distribution model that was adopted early in the Industrial Revolution.  Over the decades, that system has come to be focused more on how the academic community defines itself and less on how the world itself works. It should be replaced with a highly interdisciplinary problem-centered curriculum that brings history, philosophy, and the social and physical sciences to bear on understanding the nature of today's society and the role of the individual in that society.  This curriculum must begin with a clear sense of purpose.  As Dewey suggested, it must use the experiences of the past and contextualize them around current problems to give students the ability to direct the course of their own subsequent experience.

A second step is to free general education from the first two years of undergraduate education and incorporate the social and, to use Hutchins' phrase, moral purpose of the general education curriculum into the professional curriculum.  This can be done through research projects and problem-centered capstone experiences that require students to explore the social and moral implications of their new professional knowledge on the community around them, resulting in a “sandwich” general education program that provides a context both for citizenship and for the student’s chosen profession.

For public institutions--land grant universities, state colleges and universities, community colleges--and private institutions that accept state/federal financial aid, the key step is to recognize our continuing obligation not only to individuals and their future employers, but to citizens in general, who have invested, through their taxes, in the institution’s mission.  Otherwise, the concerns of Hutchins and Dewey--that democracy will succumb to materialism--may well prove true.

General Education must prepare students to be effective citizens of a global information society in both their personal and professional lives. This new, problem-centered approach should be rooted in several elements:

* Contextualized Knowledge – The goal should be to convey the cultural foundations of civil society in a multi-disciplinary approach that integrates history, philosophy, and social change to give students a grounding in the cultural traditions and forces of change affecting societies around the world.
* Problem-Solving Skills – At one time, the skills section of a general education program focused on communications—public speaking and writing, especially.  In today’s global information society, critical citizenship skills must include how to find and evaluate information, problem-solving, collaboration, and inter-cultural understanding.  These, in turn, require an active learning environment in which students work, individually and together, to locate and evaluate information, turn it into knowledge, and apply the resulting knowledge to solve problems. Communications skills—including speaking and writing—remain important and can be addressed within the active learning context.
* Attitudes – This includes understanding the role of globalization in shaping one’s identity and understanding one’s role as an individual in family, local community, national, and global contexts. It is in this area that the curriculum develops the student’s predisposition to act in different environments. This area should also serve to address racial and cultural stereotypes that limit the student’s ability to see herself as part of a broader community.
* Experience—Just as the Industrial Revolution stimulated the inclusion of laboratory courses to help students understand the scientific process and the standards of scientific research, the global Information Society requires that students gain direct experience in with different kinds of communities.  This can be accomplished through simulations, local internships, service-focused study abroad opportunities, or projects that bring together multicultural student teams to explore social issues and find solutions to problems.  This could also be the focus of a capstone course for professional programs.
* Collaboration – This is the ability of a student to work with other students—in the classroom, in the community, and, through technology, at other institutions—and with professionals in a range of fields to creatively find, evaluate, and apply information to solve problems.

**Developing Foundational Skills**

In many ways, the Information Revolution can also be described as the Communications Revolution.  Increasingly, written communication is how we convey ideas to family and friends and to professional colleagues around the world.  The Web has also opened new vistas for live verbal interaction through webinars and other synchronous communications as well as recorded speaking events on U-Tube.  As a result, it is essential that a general education curriculum include courses in writing—both academic and general—and public presentation.  They are more important than ever to the ability of a graduate to succeed professionally and as a citizen.

            At the same time, however, the Information Revolution has made it critical that citizens be able to evaluate information and discern between facts and the many variations of “spin” that people use to sell ideas.  Related to this is the need to identify sources of information and to validate what is posted when the source is not clear.  In this environment, information evaluation becomes essential for both citizenship and professional life.  It should be integrated into every course and major, so that students learn to be good judges of information in many different contexts.

The general education curriculum should also incorporate the technology that drives both professional and personal life—wikis, blogs, online social networking, etc.—so that students develop a sense of the effective and ethical uses of these technologies.

**General Education in Mathematics**

Most students coming into college will already have had experience with algebra, geometry, and, perhaps, a bit of calculus. If they need additional math for their chosen major, they should be able to get it. However, for the purposes of general education—what all students need in order to be effective as citizens—a course on statistics may be the most valuable experience. It is essential that citizens be able to read and understand statistics in order to make good decisions as citizens and as professionals.

**General Education in Science**

The role of the physical and biological sciences in a general education program is a knotty issue for curriculum planners.  On one hand, higher education has become sensitized to the need for graduates to have a better foundation in disciplines that contribute to an understanding of Science, Technology, Engineering, and Mathematics—the STEM skills that are increasingly needed in today’s workplace.  On the other hand, the current distribution curriculum—which typically allows students to meet their general education requirements by taking basic introductory courses in math and various science and social science disciplines—often fails to prepare students for advanced study in these disciplines or to develop knowledge and skills that allow them to makes more effective decisions in these arenas as citizens in a technology-oriented society.  In fact, many students are able to avoid taking these courses because they simply duplicate materials learned in high school.

            Institutions are thus faced with two curricular issues: (1) how to prepare students with the scientific knowledge and skills needed to be successful in more advanced courses in the science disciplines and (2) how to prepare students to be effective citizens and consumers of scientific knowledge in a technological information society.  Both are important to the undergraduate curriculum, but it is the second issue that is essential for how an institution defines general education.

 Historian and biographer Walter Isaacson noted that Albert Einstein conceived many of his breakthroughs in quantum physics first as “thought experiments”—simple situations that demonstrate the impact of a scientific truth and stimulate creative visioning. Isaacson noted that “A popular feel for science should, if possible, be restored, given the needs of the twenty-first century,” adding:

We should teach it as a creative endeavor, involving visual and imaginative thinking, rather than as the crunching of numbers and the memorization of laws. More broadly, we should embrace as a society an appreciation for the beauty and creativity of science. What science teaches us, very importantly, is the correlation between factual evidence and general theories, something well illustrated in Einstein’s life” (Isaacson, *American Sketches*, p. 148).

One model for achieving this goal is the Science, Technology, and Society (STS) movement.  [Wikipedia](https://en.wikipedia.org/wiki/Science%2C_technology_and_society) defines STS as “the study of how social, political, and cultural values affect scientific research and technological innovation, and how these in turn affect society, politics, and culture” (Science and Technology Studies, Wikipedia, para 1).   [Harvard University](http://sts.hks.harvard.edu/about/whatissts.html) notes that STS merges two kinds of scholarship:

The first consists of research on the nature and practices of science and technology (S&T). Studies in this genre approach S&T as social institutions possessing distinctive structures, commitments, practices, and discourses that vary across cultures and change over time. This line of work addresses questions like the following: is there a scientific method; what makes scientific facts credible; how do new disciplines emerge; and how does science relate to religion?

The second stream concerns itself more with the impacts and control of science and technology, with particular focus on the risks that S&T may pose to peace, security, community, democracy, environmental sustainability, and human values. Driving this body of research are questions like the following: how should states set priorities for research funding; who should participate, and how, in technological decision-making; should life forms be patented; how should societies measure risks and set safety standards; and how should experts communicate the reasons for their judgments to the public? (What is STS, para. 2)

STS teaching, notes the Harvard website, “seeks to promote cross-disciplinary integration, civic engagement, and critical thinking” (ibid.)  Stanford University, which maintains a major in STS, describes it as “liberal arts for the 21st century: an ideal preparation for life in a world constantly being shaped and reshaped by science, technology, and medicine” (<https://sts.stanford.edu/about/what-study-sts>, para. 5). An STS element of General Education could bring together both the hard sciences and the social sciences around specific societal and/or scientific issues to help students learn how to address problems in society.

**The Social Sciences**

The distribution model typically gives students several options in this area—introductory courses in psychology, sociology, and anthropology, for instance. A new general education approach might better focus student attention on the ways different communities are organized and what members of those communities need to know in order to solve problems. An example is the “Problems of Democracy” theme, which, first, builds an understanding of how our democracy is structured—the Constitution—and then how the rules of democracy as defined by our laws and culture should be used to solve current problems.

**The Humanities**

Defining the role of the humanities may be one of the most difficult parts of designing a general education curriculum, for the humanities have played differing roles in the undergraduate curriculum over the years.  Originally, of course, the humanities were the foundation of the liberal arts curriculum.  Over the past few decades, however, the humanities have seen rough times.  As the demand for humanities graduates has declined, so has the central role of humanism in the curriculum.  At the same time, the institution’s role in teaching the humanities has declined as institutions increasingly encourage the transfer of credits from high school and community college curricula to meet general education requirements.

That said, institutions recently have made some interesting experiments that may point the way.  For instance, in October 2015, Tania Lombrozo [wrote](http://rhetoric.berkeley.edu/news/news-item/2015-10-27/the-humanities-what-s-the-big-idea) about two University of California-Berkeley faculty who offer the humanities as a way to “open our eyes to the distinctive ways that people in different places and in different times, in different cultures and in different groups, have imagined what it means to be human" (<https://rhetoric.berkeley.edu/news/news-item/2015-10-27/the-humanities-what-s-the-big-idea> ).  Their interdisciplinary approach “is the study of the different ways that human beings have chosen or been able to live their lives as human beings” (citation).

What, then, should be the role of the humanities in general education?  As the Berkeley innovation suggests, the answer lies, in part at least, in positioning humanities studies to help students understand how people perceive what it means to be human—to live in a human community in particular times and particular places.  At the same time, we need to acknowledge that, in the global information society, the experience of ancient Greece is no longer the sole source of inspiration.  We no longer live within a culture defined solely by the traditions of western civilization, but in a diverse global society.  The goal of the humanities in the general education curriculum must be to prepare students to live in a multi-cultural global society in which the actions of individuals are shaped by and connected to the community by technology.

As with other parts of the curriculum, the humanities component should reflect and advance the institution’s own mission.  That said, several key elements should be present:  the program should be problem-centered, with a problem statement providing a context for reading key documents; the program should be inquiry-oriented, giving students an opportunity to explore documents to find ideas that can be used to address the problem; and the program should be interdisciplinary, allowing students to see the issue of multiple perspectives (i.e., historical, philosophical, social).

**A Sandwich Curriculum**

At most institutions, general education is contained within the first 30-36 credits of a 120-credit baccalaureate program.  The nature of the Information Society, however, suggests that some general education issues are more properly addressed as the student digs deeper into her professional curriculum.  One solution would be to move toward a “sandwich” general education curriculum in which general courses are sandwiched around the student’s major/professional curriculum.  The first part would develop the student’s understanding of the social implications of key concepts in the sciences and humanities, along with critical communications skills.  Students would then move to their professional studies.  The final general education component—the top of the sandwich—would be during the student’s senior year, when interdisciplinary capstone courses put their professional studies into the context of life in a global information society.  The goal of this capstone general education, which could be tied to an internship or practicum, would be to ensure that individuals enter the workforce with an understanding of ethics, cultural understanding and communications, and the societal implications of their profession.

**General Education and Lifelong Learning**

Tom Friedman has observed that, while in the past a baccalaureate degree prepared a student for a profession, in the Information Age, it simply prepares one for that first job. Lifelong learning has emerged as a necessity in this new era.  I would argue that this applies not just to professional education, but to general education as well.  As graduates move into their professions, they take on new responsibilities as parents, as members of new communities, and as leaders in their professions.  General education as described above should be a part of the continuing education of professionals to help them through the various roles they will play in their communities and, ultimately, to help them prepare for the third act—a fulfilling retirement. Micro-credentials may prove to be an effective vehicle for this part of the general education curriculum.

**A Commitment to Mission: The Future of Higher Education**

The discussion of general education occurs within a broader conversation about the future of higher education.  Dan Butin, writing in [Inside Higher Education](https://www.insidehighered.com/blogs/higher-ed-beta/future-future-higher-education)*,*suggests that part of the problem is that everyone seems to be focused on the impact of technology and, thus, wants to organize around “the next big thing.”  However, he notes, “Higher education is changing dramatically, from the 'new student majority’ of demographic shifts to the changing nature of faculty work and contingent faculty to the disinvestment of public higher education and the debtification of an entire generation of low- and middle-income students. But these are not problems that have been caused by or will be solved by technology. These changes have been thirty-plus years in the making” (para. 10). He argues that we need to have a clear view that technology is about transmitting information, leaving it to the university to help students learn to transform information into knowledge.  “This,” he writes, “would require a fundamental rethinking of what faculty do, of what students learn and how they document such learning, and what goals we want them to accomplish through such learning” (para. 17).

            In a 2015 article in [The Chronicle](http://chronicle.com/article/The-Slow-Death-of-the/228991) Terry Eagleton described “the slow death of the university as a center of humane critique,” which he saw as being largely rooted in the university’s capitulation ‘to the hard-faced priorities of global capitalism” (<https://www.chronicle.com/article/The-Slow-Death-of-the/228991> ).  One symptom is the death of traditional academic governance, where the faculty determine the curriculum and academic policies. With the creation of academic administration as a career, he notes, “professors are transformed into managers, so students are converted into consumers.”  Addressing the longstanding tension between the University as a “public good” versus a “private good,” Eagleton writes:

Education should indeed be responsive to the needs of society. But this is not the same as regarding yourself as a service station for neocapitalism. In fact, you would tackle society’s needs a great deal more effectively were you to challenge this whole alienated model of learning. Medieval universities served the wider society superbly well, but they did so by producing pastors, lawyers, theologians, and administrative officials who helped to sustain church and state, not by frowning upon any form of intellectual activity that might fail to turn a quick buck. citation

            Noam Chomsky sounded a similar note in [2014](http://www.alternet.org/corporate-accountability-and-workplace/chomsky-how-americas-great-university-system-getting) when he described the emergence of a business model within higher education that created layers of professional career administrators while making faculty more vulnerable by increasing the use of adjuncts and, at the same time, keeping the student body burdened by debt and, thus, less likely to repeat the student activism of the 1960s.

            Chomsky describes two basic models of higher education that have been discussed since the Enlightenment.  One is what he calls the “empty vessel” approach of knowledge transfer, what we might today call “teaching to the test.”  The other, which, Chomsky notes, the preferred model over the past three centuries . . .

. . . was described as laying out a string along which the student progresses in his or her own way under his or her own initiative, maybe moving the string, maybe deciding to go somewhere else, maybe raising questions. Laying out the string means imposing some degree of structure. So an educational program, whatever it may be, a course on physics or something, isn’t going to be just anything goes; it has a certain structure. But the goal of it is for the student to acquire the capacity to inquire, to create, to innovate, to challenge—that’s education (Chomsky, 2014; para.14).

            Higher education has suffered over the past two decades due in part to the disruptive change that technology and globalization has inspired around the world.  Certainly, one reason is that American public colleges and universities—their mission and their products and services—are a product of the Industrial Revolution; it is only natural that we should refresh the vision of higher education to meet the needs of this new social and economic context in which education operates and, at the same time, protect it from dangers in this new environment that threaten the fundamental purposes of higher education.

            Public higher education emerged as a response to a complex societal need in the 19th century:  to facilitate the massive immigration and urbanization that accompanied the Industrial Revolution and to provide the new skills that society needed to succeed in the new environment.  Among the results:

* A national network of teacher colleges
* New undergraduate and graduate programs in professions like engineering, science, and business
* New disciplines—sociology and social psychology among them—that produced new knowledge and professionals to address social issues arising from urbanization and the new community dynamics brought about by immigration and industrialization.
* A commitment to social engagement, reflected most obviously in the Agricultural Extension movement in every state but also including “general extension”—also called continuing education, outreach, and engagement—that addressed ongoing educational needs of communities and the professions.
* Distance education—originally in the form of correspondence study—designed to make rural life more sustainable and to help improve agricultural production to support urbanization.
* A broad commitment to practical, applied research across all disciplines.
* New degree programs—ranging from associate degrees to professional master and doctoral degrees.

            The questions today are: (1) What new societal needs are arising from the Information Revolution?  and (2) What must higher education do to address these new needs?

Three issues stand out as being at the same scale as those that defined the university in the industrial period:

**1.  Technology has changed the nature of “community” itself.**  In the agricultural and industrial ages, “community” a shared physical proximity was basic to the definition of a community.   Community was the shared inter-relationships of people who share a physical space.  Today, however, technology has reduced—and in some casers eliminated—physical co-location as a requirement of community.  We maintain work and social relationships with colleagues who live far away.  We work from home offices.  We purchase essentials online.  We are just beginning to comprehend how this new social structure—a combination of physical and virtual communities—affects the individual’s role as a member of political, social, professional, and spiritual communities.  The supply chain for many products is now international.  Even the help desks that we call when a product doesn’t work may be in India or elsewhere.  In the industrial era, immigration drove the economy, and this drove educational change.  In the information era, people need not necessarily move to the United States in order to participate in what is now a global manufacturing economy.  The need for American workers and professionals in the new economy is to be able to work effectively with colleagues from multiple cultures who remain in their own culture. The implications cut across the three-part mission of higher education.

**2.  Our citizens are living longer lives.**  We need to train citizens for their “third act”—to make constructive contributions to their communities, both local and global.  Higher education must not focus solely or even primarily on high school graduates, but must be there to help them through all three stages:  first professions, career changes, and the often voluntary contributions that retired adults can make to their communities.  At each stage, we also need to ensure that education is not just vocational training, but helps students at all three stages find satisfaction in individual and community roles.

**3.  We are at the threshold of major climate change in our world.**The coming decades will see dramatic impact on coastal communities and on worldwide agriculture.  Just as our land grant universities helped to support industrial urbanization and immigration by focusing on agricultural production in the midst of the Industrial Revolution, we now need to conduct research and prepare society for the implications of climate change.  Those implications include massive migrations within and between nations as populations move away from coastal flooding; significant changes in agricultural productivity that could lead to large-scale food shortages; and the need to find new sources of energy.  In the process, climate change will put stress on national and international social and political institutions and processes and will require new social service professionals.  Higher education’s response to climate change will require new emphases in research, the development of new curricula to prepare professionals and the population as a whole to deal with migration and other issues, and new partnerships between institutions to share faculty, and to conduct collaborative research across political, social and climate frontiers.  Increasingly, international institutional partnerships will be needed to help institutions address issues that affect their local communities.

            Ultimately, however, the future of higher education rests in accepting the fact that higher education institutions are *not* corporations.  Colleges and universities are not companies.  They are complex social organizations that have developed to meet the needs of the societies in which they operate.  They depend on a commitment to ideals, like shared governance, to ensure that the delicate balance between individual faculty expertise and organizational commitments is maintained so that the institution can serve society.   Universities cannot allow themselves to become simply the training arm and private laboratory of commercial interests.  Their commitment must be to the broader society.

            Only this commitment—supported by the effective use of technology to engage communities and facilitate collaboration across institutions—will allow higher education to translate goals that both Eagleton and Chomsky describe into practice in the Information Society.

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