

# Global Education: Connections, Concepts, and Careers

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## Executive Summary

Following the completion of this century's first decade, educators, policymakers, and researchers are attempting to predict future needs. However, is it possible to know what the education and global landscape will look like at the end of this century? Certainly, in 1900 one could not have comprehended the myriad innovations that would occur by the year 2000. What we know is this: The skills to survive and thrive in this century have transitioned from a memorizing or banking<sup>1</sup> perspective to that of accessing, navigating, and filtering. Moreover, the primacy of technology to our daily lives and events and phenomena across the globe cause many to rethink how best to prepare students in an education system born out of Prussian and industrial-era influences. Of additional importance for American education, comparative assessments demonstrate that other nations have surpassed the U.S. when it comes to preparing their students. This dynamic must inspire innovative solutions to improve American education. But, because demographic, linguistic, vocational, economic, and political variables differ from country to country, we cannot simply copy systems that outrank or outperform the U.S. Also, solutions must be developed to support a balance between competitive and collaborative reform efforts. While many obstacles exist, including cultural, economic, and political considerations, with the appropriate framework, organizations such as the College Board can support U.S. education systems (at the local, state, and federal levels) to maintain relevancy amid a shifting paradigm. Moreover, organizations such as the College Board can concurrently increase access and equity to provide more students with greater opportunities to learn and then contribute to the national well-being. As this paper will explore, at the heart of this movement will be the adoption of global skills in curricula, assessments, and pedagogy. Thus, while we may not know what the education and global landscape will look like in 2100, students who benefit from this reform movement globally will be prepared to excel and succeed.

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1. Paulo Freire in *Pedagogy of the Oppressed* coined the concept of banking, which refers to "depositing" information into students. He argues that this falsely presumes (1) everyone should know the same thing and (2) it is known today what should be understood tomorrow. See [www.webster.edu/~corbetre/philosophy/education/freire/freire-2.html](http://www.webster.edu/~corbetre/philosophy/education/freire/freire-2.html).

## Introduction

This report examines, summarizes, and offers solutions to what may be the biggest challenge facing the United States in the coming decades. As other countries become increasingly competitive through rising levels of interaction in the globalized economy, the U.S. is faced with the challenge of retaining the competitive advantage it has built through decades of economic growth. If the U.S. does not enact measures to counter this growing competition, it faces the risk of being outmaneuvered, outperformed, and outpaced by countries that have the ability to adapt to ever-increasing rates of constant change, something that will characterize global markets for the foreseeable future. In order to achieve this goal, the U.S. must possess a citizenry who demonstrate sufficient levels of global competency — that is, they have the right skills, aptitudes, and dispositions necessary to navigate and excel in a highly fluid, globalized, and increasingly competitive environment.

Ultimately, this report examines the role of education in enabling American students with the skills, aptitudes, and dispositions required in order to be effective and competitive in the current and in the future globally interconnected and interdependent world system. Its purpose is to convince the reader of the utility in the integration of a pedagogical approach to the promotion and development of these skills throughout the systems of education within the United States, which vary from state to state.

There is an ever-increasing awareness among educators, students, parents, policymakers, and the general population that education needs to respond to the constantly evolving global paradigm. In particular, students must learn in ways that prepare them to engage

effectively in a world increasingly defined by global interconnectedness and global issues. The movement toward this kind of education is by no means new. As early as 1988, the Council on International Educational Exchange (CIEE) stated, “Effectiveness in [an intensely interdependent] world requires a citizenry whose knowledge is sufficiently international in scope to cope with global interdependence” (CIEE, 1988). In the decades since, education in the United States and throughout the world has seen a significant push toward internationalization (Biddle, 2002). This transformation has taken many shapes, including endeavors such as the homogenization of higher education degree programs in Europe and beyond, the boom in study-abroad programs in universities, the efforts to internationalize public school curricula, the growth of diversity initiatives and the development of countless nonprofit organizations offering global education programs. In addition, scholars across a wide range of disciplines have created a rich body of literature focused on how education can prepare students for the ever-changing demands of a globally connected world.

In particular, students must learn in ways that prepare them to engage effectively in a world increasingly defined by global interconnectedness and global issues.

Although there may be considerable interest in the education community (especially in higher education) in promoting global competency,<sup>2</sup> there is no single, unanimously accepted definition of the term (Hunter, 2004). What are the specific sets of skills, knowledge, and attitudes a student must develop in order to be globally competent? To answer this question, other questions must first be addressed. In what ways will global competency help students engage effectively as members of a global community, while also supporting them as individuals, local community members, and citizens of a particular nation? Are there economic, political, or social implications of this type of education and, if so, what are they? Practically speaking, how can global competency be incorporated effectively into formal, nonformal, and informal<sup>3</sup> educational activities? Furthermore, how can global competency skills be measured and assessed on an individual level and how can the impact of global competency be assessed on a national or an international level?

This paper will address these questions through a review of literature on a broad set of topics that relate to global competency, including globalization, the knowledge economy, 21st-century skills, international education, education and the economy, and civic returns on education, among others. First, the concept of global competency will be situated in a historical and theoretical context, briefly taking into account the historical backdrop that contributed to contemporary global education initiatives, as well as the theories of globalization as they relate to education. Then global competency will be defined using a framework that identifies three distinct groups of knowledge and skills:

- (a) Empirically based knowledge and skills such as basic competency and numeracy, science, and technology skills
- (b) Higher-order cognitive and metacognitive skills such as critical thinking and creative problem solving
- (c) Global dispositions, perspectives, and attitudes

Models for teaching and testing global competency will be examined, as will the potential economic and civic justifications for incorporating global competency into a broad education agenda.

## Contextualizing Global Education

Concepts such as “global education” and “global competency” are almost always discussed in the context of the new millennium, the 21st century, or the era of globalization. Indeed, the skills and rationales discussed in this paper are derived from a perception of the world that highlights globalization as the most salient lens through which to analyze the contemporary world, so it is essential to have a baseline understanding of what the very term *globalization* means, as well as how it impacts education. However, international education did not begin in the era of contemporary globalization, and a historical overview of international education will

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2. The term *global competency* is used by international development and aid agencies and in the majority of literature and research to describe the state of being equipped with a particular set of skills and knowledge appropriate for a world highly influenced by global economic, cultural, political, and environmental systems. “Global competencies” and “21st-century skills” are often used synonymously, although the trend is moving toward global competencies now that we are in the second decade of this century.

3. Formal education as K–16, classroom-based experience; nonformal as incidental/unintentional learning outside of a formal environment (i.e., individual as agent of learning); informal as intentional, organized learning outside of the classroom (i.e., after-school programs, community-based organizations, museums, etc.).

help bring into focus the ways that globalization (both as a theory and as an actual process) informs current internationalization efforts.

## Historical Context of Global Education

International educational endeavors have long been employed as tools for making the most of international opportunities and addressing international challenges (De Wit, 2002). The contemporary push for a globalized education agenda can be seen as an extension of this tradition. Higher education, in particular, has been and continues to be a welcoming arena for international exchanges, programs, and collaborations. Some scholars even argue that universities are inherently international institutions. In his comprehensive historical analysis of internationalization in higher education, Hans de Wit cites Clark Kerr (the first chancellor of the University of California, Berkeley) in saying that “universities are, by nature of their commitment to advancing universal knowledge, essentially international institutions” (De Wit, 2002). Although universities and other educational organizations around the world have long engaged in international projects, this paper will focus on a few key 20th-century international education developments in the United States in order to provide an ample, but by no means complete, historical backdrop to the current wave of global education.

The 20th century witnessed the inception and development of many international education projects that were targeted primarily at addressing the diplomatic and political challenges of the time. De Wit points out that education became an important strategic tool for both the United States and the USSR during the post–World War II era: “Both powers had clear political reasons to promote international educational exchange and cooperation: to gain a better understanding of the rest of the world and to maintain and even expand their spheres of influence ... international exchange and cooperation in higher education became an important tool to reach these objectives” (De Wit, 2002, 11). International exchange and cooperation took on several forms during this period, but perhaps the most widely recognized of these efforts is the Fulbright Program. The passing of the Fulbright Act in 1946 — through which the U.S. government began funding international educational activities for university students from around the world — marked the beginning of a robust international exchange industry in the U.S. (Johnson & Colligan, 1965). Amidst the instability of the Cold War, international educational exchanges were one strategy to fend off the advancement of communism and firmly establish the United States as the primary world superpower. William Fulbright, senator and author of the Fulbright Act, resisted politicized appropriations of the international exchange program and insisted that the purpose was not indoctrination of foreign students into the political or cultural values of the United States; instead, he believed in the power of international exchanges to build mutual understanding among people of different backgrounds (Fulbright, 1966). Nevertheless, it is clear that the U.S. government was motivated to fund these exchanges because “it was in our national interest that other peoples of the world understand the United States — its history, civilization, ideals and institutions ...” (Johnson & Colligan, 1965). Similarly, U.S. government and educational institutions offered monetary and technical assistance to the developing world in order to create universities and research organizations, especially in the 1960s and 1970s. These financial and intellectual investments were motivated out of humanitarian interests and also out of a desire to expand the positive influence of the United States in developing regions of the world in a race against similar efforts by the USSR (De Wit, 2002).

Internationalization was not merely a one-way process wherein American students, scholars, funding, and intellectual property moved from the U.S. to other parts of the world. In fact,

institutions of higher education within the United States experienced significant changes resulting from internationalization during the 20th century. One example is the advent of area studies departments in universities across the U.S. Rebecca Lowen (1997) explains how “New programs, fields and departments — among them international relations, Soviet studies, East Asian studies, cultural anthropology, communications and statistics — were institutionalized in leading universities after [World War II] ...” in response to the perceived lack of strategic knowledge about key areas of the world. Immanuel Wallerstein expands on this notion:

“The United States believed it needed to know about current dynamics in non-Western areas not merely to ‘promote economic, political and cultural relations among nations’ (in the words of the Social Science Research Council [SSRC]) but in order to better understand the functioning of those that already had communist regimes and to help prevent other areas from ‘falling into the hands of the communists,’ a theme that was central to U.S. official rhetoric for over forty years” (Wallerstein, 1997, 200–201).

These notions provided the impetus for the formation of interdisciplinary academic departments made up of linguists, historians, anthropologists, geographers, political scientists, and others — all of whom focused their research on a particular strategic region of the world. The very existence of such departments is a primarily American phenomenon (Almond, 1992) and, according to R. A. Palat, “has had a transformative impact on comparative studies of societies and histories outside the privileged arena of Europe and North America ...” (Palat, 2000, 64).

Area studies departments continue to be a fixture in many colleges and universities across the United States. However, in the decades since the Cold War, some have criticized area studies for reasons ranging from the perceived lack of scientific rigor in area studies research to the possibility that these departments were born out of an antiquated intellectual tradition that essentializes foreign peoples and cultures and falls prey to an overly simplified and problematic “us” versus “the other” mindset (Biddle, 2002). Another critique is aptly summarized in the following passage from Sheila Biddle:

“... the world has changed dramatically since the 1950s. The emergence of the global economy and the ongoing revolution in technology have already changed the nature of economic and political relationships between countries and regions, and moved the world toward greater interdependence ... These developments present new challenges to scholars seeking to understand the forces shaping the twenty-first century world. Many of them reject the area studies approach as too narrow, opting instead for a broader perspective that looks at common problems across regions and views them in transnational or global terms” (Biddle, 2002).

Whereas the 20th century was largely defined by the two world wars and the ensuing Cold War, the 21st century, as Biddle argues, is largely defined by increasing global interconnectedness. Just as international educational endeavors in the 20th century were designed to meet challenges specific to that era, so too must education in the 21st century (and beyond) match the realities that are currently defining and shaping the world. Global competency education is attempting to resolve this challenge.

## Globalization and Education

The depth, breadth, and complexity of the process that has come to be known as globalization cannot be understated. Scholars seem to agree that globalization is, for now at least, “the international system that has replaced the Cold War system” (Friedman, 1999) and serves as the most important lens for analyzing, defining, and interpreting the events, trends, and challenges currently occurring on a global level. Put simply, “Globalization defines our era,” and “... seems deeply implicated in nearly all of the major issues of the new millennium” (Suárez-Orozco & Qin-Hilliard, 2007). But precisely what does globalization mean? And even more important for this paper, how is it affecting education?

Globalization means many things to many people, and there is no one definition that perfectly encapsulates its numerous interconnected processes. Scholars approach the concept of globalization in ways that are largely dependent on their disciplinary background.<sup>4</sup> For example, economists tend to locate their understanding of globalization in the increasingly interconnected global financial system, international trade, and movement of capital throughout the world. Linguists, meanwhile, focus on the unprecedented spread of English as a global language, the emergence of new hybrid forms of language brought on by the mass movement and interaction of people around the world, and the threat posed to dying languages by globalization’s homogenizing forces (Pennycook, 2006). Political scientists, on the other hand, examine the changing role of nation-states and the political ramifications of an increasingly interdependent world. One aspect of globalization that most scholars agree upon is that it is not actually a new phenomenon (Tilly, 2004; Friedman, 2007; Tikly, 2001). As Charles Tilly points out, “Since the movement of humans out of Africa some 40,000 years ago, humanity has globalized repeatedly. Any time a distinctive set of social connections and practices expands from a regional to a transcontinental scale, some globalization is occurring.” Thomas Friedman (2007) conceptualizes the age of exploration beginning with Columbus in

1492 as the first phase of globalization, while Leon Tikly (2001) cites the movement of global religions and the resultant spread of culture and education as another significant period of globalization. What makes the contemporary era distinct, however, is that these global flows of capital, people, goods, technologies, languages, and cultures have intensified in unprecedented ways (Tikly, 2001, 156). With these considerations in mind, the following definition will serve as a suitable starting point for understanding globalization as it relates to the issues in this paper:

Over the last decade, globalization has intensified worldwide economic, social, and cultural transformations. Globalization is structured by three powerful, interrelated formations: (1) the post-nationalization of production, distribution, and consumption of goods and services — fueled by

growing levels of international trade, foreign direct investment, and capital market flows; (2) the emergence of new information, communication, and media technologies that place a premium on knowledge-intensive work; and (3) the unprecedented levels of worldwide

Thus, globalization should also change the manner in which we understand and approach education.

4. For an overview of disciplinary trends in thinking about globalization, see “Interdisciplinary Reflections on Globalization” in the introduction to *Learning in a Global Era* by Marcelo Suárez-Orozco and Desirée Baolian Qin-Hilliard (Berkeley: University of California Press, 2007).

migration generating significant demographic and cultural changes in most regions of the world (Suárez-Orozco & Suárez-Orozco, 2006).

Economic globalization is often considered the juggernaut driving other types of global integration. Nevertheless, cultural, technological, political, and social interdependence on a global scale are likewise defining and shaping the realities of the 21st century and carry significant implications for many aspects of human life, including education.

Globalization has changed the way we do business, the way we behave as consumers, the way we participate as voting members of a democracy, and even the way we watch movies or eat in restaurants. Thus, globalization should also change the manner in which we understand and approach education. In a display of impressively astute forward thinking, the Committee on World Regions of the SSRC wrote the following in 1943:

“No matter what shape international organization may assume, the United States will enjoy unexampled opportunities and face heavy responsibilities. The ease, speed and cheapness of communication and transportation will tend to promote economic, political and cultural relations among nations. Trade, shipping, airlines, the press ... banking, government service, industry and communications will require thousands of Americans who combine thorough professional or technical training with knowledge of languages, economics, politics, history, geography, peoples, customs and religions ... Research, graduate teaching, undergraduate instruction and elementary education in world regions will be desirable as far as one can see into the future” (cited in Wallerstein, 1997).

In the nearly 70 years since this passage was written, more and more educators, politicians, and policymakers have embraced — at least in rhetoric — the need for education that supports successful engagement in a globally interconnected world (Biddle, 2002). The glacial pace of educational change seems to have hampered any truly comprehensive efforts to reform education to meet the challenges of globalization, especially at the primary and secondary school levels (Carnoy & Rhoten, 2002). This reality is unfortunate for many reasons, namely because “globalization has heightened the economic importance of knowledge” (Bloom, 2006). Economists Frank Levy and Richard J. Murnane convincingly argue that globalization and computerized work have forever changed the employment landscape in the United States and beyond, and that these changes subsequently have affected the types of skills students should now be learning (Levy & Murnane, 2007, 167). In addition to computerized work, outsourcing plays a significant role in shaping labor market needs and, therefore, should shape the way future workers in high-wage nations are learning (Friedman, 2007). Approaching the issue from a critical perspective that emphasizes education’s role in ensuring that the process of globalization is more equitable and serves social justice, Nelly Stromquist argues that educators in the global era should:

“First recognize how globalization is changing the nature of schooling and universities, the growing interconnection between knowledge and power, and the cases in which education has become either a silent partner or a conscious opponent ... Second, they should examine formal education ... nonformal education ... and informal education ... as key venues in which to provide understanding about the various positive and negative consequences of globalization. ... Third, they should use education as a means to create active citizens, moving people from passively observing the actions of others to undertaking action themselves ... In this manner, the positive promise of globalization — ensuring a better world for *all* stands a good chance of being realized” (Stromquist, 2002, 187–188).

Regardless of one's valuation of globalization, it is clear that "If knowledge is fundamental to globalization, globalization should also have a profound impact on the transmission of knowledge" (Carnoy & Rhoten, 2002). Exactly *how* education should be reshaped in response to the forces of globalization will be explored in the following section.

## A Global Education Framework

In a recent lecture, Eugene Murphy, vice provost for Globalization and Multicultural Affairs at New York University, spoke at length about the multilayered, widespread, and transformative impact of globalization on education and the world at large. Despite his depth of knowledge on the subject, he mentioned that he has yet to read or hear any account of globalization that, in his opinion, wholly grasps how globalization has impacted human activity. Because globalization is such a complex and ongoing story, it is "hard to get at from the middle" (Murphy, lecture, 2010). Put another way, "Studying globalization on the ground is a tricky venture" (Monahan, 2005).

This point is important for a few reasons. First, it helps explain why there has been such an abundance of thinking and writing on globalization and its many subtopics over the past several decades. The topic of this paper is no exception; education for the global era has garnered interest from a variety of perspectives and continues to be a brisk area of interest in the education field. Second, it brings to the surface one of the conundrums of global education: Advocates for global competency seek to provide a curriculum that simultaneously addresses the issues brought about by globalization to date, while preparing students to be the inventors of an unknown future that continues to be shaped by global forces (Reimers, 2009). As a result, no singular framework for global competency will ever be complete since change and the need to respond to change are inherent parts of global education. Even relatively recent literature on the subject reflects the quick pace of both theoretical and practical evolution in the field. As will be shown in subsequent sections, a central tenet of global competency education is that knowledge, skills, and dispositions need to be open to critical reflection, adaptation, and innovation rather than being static.

With that said, this paper will lay out a framework that synthesizes and organizes major themes on the topic of global education from both scholarly literature and professional or educational organizations working in the field.<sup>5</sup> This framework will identify three groups of knowledge and skills that, together, represent a guide to global competency as it has been defined in the literature. The three groups are: (a) empirically based knowledge and skills such as basic competency and numeracy, science, and technology skills; (b) higher-order cognitive and metacognitive skills such as critical thinking and creative problem solving; and (c) global dispositions, perspectives, and attitudes.

It is important to note that these three global competency tiers should be conceptualized as interdependent and overlapping. Together, they form a suite of global knowledge and skills, but this does not mean that each and every part of the suite is decidedly global. For example, the first group of skills includes traditional disciplinary subjects such as English, math, history, and science. Although these subjects in and of themselves may not be global in nature, they function as necessary building blocks that support the development of other skills. They also serve as platforms for teaching global interdependence, cultural diversity, and international issues.

5. For a comprehensive review of existing global skills frameworks, see Chris Dede, "Comparing Frameworks for 21st Century Skills" in *21st Century Skills* (Bloomington: Solution Tree Press, 2010). See also Appendix C for cases and Appendix E for frameworks.

Before discussing each of the three groups of global skills and knowledge, it will prove useful to begin with a suitable working definition of global competency. Many attempts have been made to define the term, but Fernando Reimers presents a definition that succinctly yet thoroughly encapsulates the idea as it is understood in this paper:

“Global competency [is] the knowledge and skills that help people understand the flat world in which they live and the skills to integrate across disciplinary domains to comprehend global affairs and events and to create possibilities to address them. Global competencies are also the attitudinal and ethical dispositions that make it possible to interact peacefully, respectfully and productively with fellow human beings from diverse geographies” (Reimers, 2010). This definition is particularly suitable because it captures the notion that global competency is characterized not just by skills and knowledge, but also by dispositions. Education may be seen primarily as a site for the transmission of information, facts and knowledge, but it is also an important institution for socialization. Children are constantly learning how to function within the greater social context of the family, peer groups, the media, churches and other institutions. In reference to education and globalization, Torin Monahan (2005) points out that schools are possibly “*the* primary location for social reproduction, values cultivation and identity construction,” so schools, more than ever, must take on the responsibility of forming students into globally conscious and engaged citizens.

## Tier 1: Empirically Based Knowledge and Skills

Broadly defined, these are the skills and sets of knowledge that are empirical and practical. One could think of these as “information students need to know.” As mentioned previously, school subjects within the traditional disciplines (math, science, language arts, history, etc.) fall into this category, along with a few additional “21st-century skills.” This tier includes the following sets of knowledge and skills:

- Native language literacy
- Nonnative language literacy
- Numeracy and quantitative skills
- Science
- Geography, history, and politics
- Social studies
- Economics
- Digital literacy

One of the most widely adopted and well-known frameworks for global competency comes from the Partnership for 21st Century Skills.<sup>6</sup> Under its framework, many of these skills fall under the category of “core subjects,” which is based on national standards for learning in the disciplines (Dede, 2010).

A mastery of the knowledge and skills included in this tier is essential for the globally competent student for a few distinct reasons. First, core subjects such as algebra, English language arts, and history are foundational to other types of knowledge. Renowned

6. [www.21stcenturyskills.org](http://www.21stcenturyskills.org)

developmental psychologist Howard Gardner supports the inclusion of what he terms “disciplinary mastery” in globally minded education, saying, “It is and should be the major burden of middle and secondary school.” He explains:

“All over the modern world, a general educational sequence is followed, and with good reason. During the primary years, young students learn the basics. Traditionally, these are reading, writing and basic arithmetic; nowadays, many places would add the use of the computer. Once the three Rs have become relatively fluent, students are ready to master the major subject matters or disciplines of their culture” (Gardner, 2006, 10–11).

These core subjects serve as an entryway to the later acquisition of higher-order cognition. In the case of first language literacy, this may be a statement of the obvious. Clearly, language is the tool that underpins the acquisition of most forms of human knowledge and skills. But other basic disciplinary skills play a similar role, albeit more tacitly. Take, for example, arithmetic. In a recent NPR story, Keith Devlin (alternatively known as “The Math Guy”) admitted that computers can do basic arithmetic for us; however, having basic arithmetic skills such as addition and multiplication is absolutely essential if one is to learn algebra, and knowing algebra is, in turn, an essential foundation for a whole host of other important skills (Devlin & Simon, 2011). Devlin explains, “... making computers do the things we want them to do requires algebraic thinking. For instance, take a computer spreadsheet. The computer does all the calculations for you automatically. But you have to write the macros that tell it what calculations to do and that is algebraic thinking.” Furthermore, a mastery of core subjects is important from a human capital perspective because “while ... 21st-century employers want employees who can be creative, collaborative and [able to] solve complex problems, they will look at those skills only after they confirm that prospective employees have mastered the ‘three Rs’” (Stergios, 2009).

A second reason the skills and knowledge in this tier are important was alluded to earlier; namely, that they provide a springboard for teaching and learning about global issues. This concept is captured in the “21st Century Themes” portion of the Partnership for 21st Century Skills Framework (Partnership, 2009). Briefly stated, it asserts that global themes such as the environment, health, and the economy should be interwoven with curricula focused on the traditional school subjects so that students are simultaneously acquiring baseline knowledge of disciplinary fields and applying that knowledge to real global issues in an interdisciplinary way.

Finally, many scholars indicate that second language literacy and digital literacy are intrinsically tied to global competency. It is true that English may be “the first world-wide lingua franca” (Van Parijs, 2000), but there is also growing consensus that even native English speakers must step out of their linguistic comfort zone and engage more thoroughly and thoughtfully in second language acquisition (Reimers, 2010; Levine, 2005; American Council on Education, 1995). Developing second language literacy is vital to America’s economic, security, and social interests, and there should be a strategic emphasis on critical languages such as “Chinese, Arabic, Korean, Japanese, Farsi, Hindi and Russian” (Levine, 2005). There is a dangerously outdated preference among educational institutions and the students who attend them for teaching and learning the few Western languages that have been associated with academe for centuries. The American Council on Education reflected this fact in a 1995 report:

“To judge by the total number of undergraduate degrees awarded in such languages as Chinese, Japanese and Arabic, these ancient, powerful civilizations are perceived as unimportant. Our institutions confer ten times as many degrees in German as in Chinese, graduate 18 times as many French speakers as Japanese speakers, and count nearly 500 graduates fluent in Spanish for every one fluent in Arabic.”

Second language acquisition offers many benefits in addition to the potential foreign policy and economic advantages. It also serves as a locus of cross-cultural education wherein students can begin to explore alternative ways of thinking, believing, and understanding. Rita Süßmuth, scholar and former president of the German Parliament, argues that schools should offer young schoolchildren “the option of learning a foreign language ... so that they might understand the experience of communicating in another language and acquire skills that will help them in a globalizing business world” (Süßmuth, 2007).

Digital literacy is also seen as a cornerstone of global competency and is included in nearly every major global education framework (Dede, 2010). A 1983 report on college preparedness by the College Board shows that educators were already tuned in to the importance of digital literacy: “In schools and colleges the computer is being used by students and their teachers as an instrument to receive, organize, store, analyze and interpret information ... Competency in its use is emerging as a basic skill complementary to other competencies such as reading, writing, mathematics and reasoning” (College Board, 1983). Since the information era is so heavily defined by new technologies and the changing shape of communication and commerce impacted by those technologies, students must acquire the skills to work with existing technologies from an early age, as well as the desire and the capacity to learn new technologies as they are developed.

Digital literacy is also seen as a cornerstone of global competency and is included in nearly every major global education framework.

## Tier 2: Higher-Order Cognitive, Metacognitive, and Interpersonal Skills

While the first tier of this framework emphasized the need for students to possess certain foundational sets of knowledge such as basic literacy and numeracy, this tier emphasizes the skills that allow students to access, manage, interpret, and apply knowledge. It also includes certain interpersonal skills that are necessary for contemporary workplaces marked by connectivity and collaboration. One could think of the skills in this tier as “what students need to be able to do.” The following list is not comprehensive but includes the most commonly cited higher-order skills found in the literature and in most 21st-century skills frameworks:

- Critical thinking
- Problem solving
- Creativity
- Innovation
- Information literacy
- Communication

- Collaboration
- Flexibility and adaptability
- Lifelong, self-driven learning

These skills are interrelated and overlapping and should not be thought of as discrete subjects. In addition, they complement rather than stand apart from the knowledge and skills in the other two tiers of this framework.

### Cognitive Skills and the Knowledge Economy

These cognitive and interpersonal skills lend themselves to many facets of contemporary life, but they are often discussed in the context of the “knowledge economy.” In the era of globalization, knowledge — rather than capital or physical labor — is increasingly at the center of economic production. These changes have infused a new significance into the possession and handling of knowledge, especially in industrialized countries like the United States. A report by the World Bank states:

“A knowledge-based economy relies primarily on the use of ideas rather than physical abilities and on the application of technology rather than the transformation of raw materials or the exploitation of cheap labor ... The global-knowledge economy is transforming the demands of the labor market throughout the world. It is also placing new demands on citizens, who need more skills and knowledge to be able to function in their day-to-day lives. Equipping people to deal with these demands requires a new model of education and training ...” (World Bank, 2003, xvii).

The demands of the knowledge economy have led educators to reassert the importance of higher-order cognitive skills. Some point out that these are “the habits associated with a traditional liberal arts or humanities education” (Knell, Oakley & O’Leary, 2007), but a recent trend in American education has displayed the emphasis on content knowledge over the development of complex cognitive skills.

### Critical Thinking and Problem Solving

Critical thinking and problem solving tend to receive a lot of attention in the literature about education reform for the 21st century. All major frameworks for global learning include critical thinking and problem solving as key points (Dede, 2010). Some educators advocate for a comprehensive shift toward “problem-based learning” wherein “teachers design whole units around complex ... problematic scenarios that embody the major concepts to be mastered and understood” so that “students are no longer passive recipients of knowledge; they are decision makers ...” (Barrell, 2010, 178–179). Economists Frank Levy and Richard Murnane present a compelling argument for the importance of these skills in their article “How Computerized Work and Globalization Shape Human Skill Demands.” They assert that the types of jobs available in the U.S. labor market are undergoing significant changes due to the forces of globalization (mainly outsourcing jobs that were once performed by U.S. workers) and computerized work (technologies replacing jobs once performed by human workers). In order to mitigate the outward push of jobs through outsourcing and computerized work, the U.S. workforce needs to be equipped with more workers capable of “expert thinking, or solving problems for which there are no rule-based solutions.” The authors call upon educators and students to work toward this goal, but they cite troubling statistics about the projected number of U.S. college graduates lagging behind employer demand for more highly educated workers (Levy & Murnane, 2007, 170). Thomas Friedman takes a more optimistic stance on

the issue, arguing that jobs replaced by outsourcing and digitization should not be seen as lost opportunities for American workers. Instead, he views the situation as helpful in the sense that "... it frees up people and capital to do different, more sophisticated work, and it helps because it gives an opportunity to produce the end product more cheaply, benefiting customers even as it helps the corporation" (Friedman, 2007, 21).

### Information Literacy

Given that knowledge and information hold an elevated status in today's economy, it is vital that students possess information literacy. *Information literacy* can be defined as the combined abilities to locate, critically examine, evaluate, interpret, synthesize, prioritize, and apply information. In an article identifying the "Five Minds for the Future," Howard Gardner labels one as "the synthesizing mind," saying "... in the 21st century, the most valued mind will be the synthesizing mind — the mind that can survey a wide range of sources; decide what is important and worth paying attention to; and then put this information together in ways that make sense to oneself and, ultimately, to other persons as well," (Gardner, 2010, 13). Students are being confronted with an ever-expanding multitude of information that they must learn to navigate effectively. Global competency curricula need to include lessons that train students to do just that.

### Innovation and Creativity

The innovative, entrepreneurial spirit that has so long defined the United States needs to be fostered through a global competency curriculum. As difficult as it is to define American culture, most agree that innovation, creativity, and openness are at the core of the American experience. References to the dire need for education to cultivate young people's creative thought and ability to innovate abound in the literature (Bloom, 2006; Gardner, 2010; Lemke, 2010). Stephanie Bell-Rose and Vishakha Desai (2005) explain that, "For American educators, the challenge is to help students project the values that have guided our domestic life as a nation of immigrants — freedom of thought, respect for diversity, openness to new ideas — onto the global stage." Some argue that the most important role in the global economy for American workers is that of innovator: "America's job is not to fight with India and China over the old middle but to invent the new middle, and more ... that is our mission — and our best hope ... The *only* way we are going to keep our standard of living rising is to build a society that produces people who can keep inventing the future" (Friedman, 2007, 399).

### Lifelong Learning

The ability and the motivation to drive one's own learning throughout a lifetime are other essential components of global competency. As mentioned earlier, a key characteristic of the knowledge economy is that information is abundant and in a continual state of flux; therefore, it is critical that learning extend beyond the years of formal education: "[T]he amount of technological knowledge in the world is almost doubling every two years. Thus, the notion that we could take all of the facts that a person needs to know, divide them into twelve years of schooling, and learn those facts and be done does not clearly equip young people for the future" (Darling-Hammond, 2010). Again, it is important to understand that certain foundational sets of knowledge are unnecessary in a global curriculum. Instead, students need to be instilled with basic fundamental knowledge upon which they can continue building for a lifetime: "A good factual foundation, and a positive disposition to continue learning throughout life about global affairs, can serve students better than many facts taught in boring ways or than a curriculum that caricaturizes world history or social studies" (Reimers,

2010). Contextualized from an economic perspective, “Lifelong learning is crucial to preparing workers to compete in the global economy” (World Bank, 2003).<sup>7</sup>

### Tier 3: Global Dispositions, Perspectives, and Attitudes

The competencies in this tier are distinct from the other two tiers in a few key ways. First of all, they are the most obviously “global” in nature in that they embody the core values of cosmopolitanism,<sup>8</sup> specifically being a citizen of the world (Parker, in press). Second, these competencies are not so much skills or specific sets of knowledge as they are behaviors, mindsets, values, and sensibilities. One should understand the items in this tier as supporting “a mindful way of *being* in the world today” (Gardner, 2010). Again, this list is by no means comprehensive but includes major points from the literature:

- Curiosity and knowledge about the world and its people
- Tolerance across racial, linguistic, national, and cultural boundaries<sup>9</sup>
- Awareness of one’s own cultural, political, geographical, or socioeconomic perspectives, assumptions, and traditions
- Awareness of others’ cultural, political, geographical, or socioeconomic perspectives, assumptions, and traditions, or a willingness to become aware
- Appreciation of nuance and complexity
- Awareness of and willingness to act in ways that acknowledge global interconnectedness
- Sense of personal agency and belief in the capacity to effect outcomes and make a contribution, in an age-appropriate manner
- Sense of responsibility to others, including “distant others”
- Concern for fairness, justice, and progress on a global scale

Although it is important to understand that these dispositions cannot come from schooling alone, education is an influential space for shaping such attitudes. Also, along with the skills mentioned in the previous section, these concepts can be interwoven with lessons across disciplinary curricula. In other words, a separate course on “global dispositions” is entirely unnecessary if, instead, language, social studies, math, and science teachers work to infuse their subject content with globally relevant units. In one case, a 10th-grade history teacher developed a unit on offshoring<sup>10</sup> to help his students gain a broader understanding of economic forces within a global historical context (Mansilla & Gardner, 2007). The results were impressive: The students were highly engaged in learning and mentioned that concepts

7. The World Bank report, *Lifelong Learning in the Global Knowledge Economy: Challenges for Developing Countries*, focuses on education in developing nations and provides a useful review of key concepts around lifelong learning as they relate to any nation’s education.

8. The scholarly discussion of cosmopolitanism is vast. For a recent article exploring the concept philosophically as it relates to education in the global era, see David Hansen, “Cosmopolitanism and Education: A View from the Ground” (*Teachers College Record*, 2010).

9. From Marcelo Suárez-Orozco and Desirée Baolian Qin-Hilliard, *Globalization: Culture and Education in the New Millennium* (Berkeley: University of California Press, 2004).

10. Relocating US companies abroad.

from the unit carried over from the classroom to considerations in their daily lives. The authors assert that this teacher's efforts "nurture[d] students' *global consciousness* — a disposition to place their immediate experience in the broader matrix of developments that shape life worldwide, to construct their identities as members of world societies, and at least in some instances, to orient their actions accordingly" (Mansilla & Gardner, 2007, 56). Ultimately, developing this type of consciousness will bolster students' ability to engage in the world as social, cultural, political, and economic agents who are confident in their own locally grounded perspectives but also open to ongoing critical examination that takes into account and values multiple perspectives.<sup>11</sup> Attaining a global consciousness will help students to become effective as well as responsible workers and citizens in an interdependent world.

## Teaching and Assessing Global Competency Skills

The scope of this paper does not allow for a thorough examination of global competency teaching and assessment practices. Instead, it should serve as a point of entry for further thought and discussion on the topic and as a brief review of some of the major themes in literature. Given the discouragingly slow pace of institutional change (especially when it comes to primary and secondary public schooling), the project of internationalizing education can seem daunting (Corrales, 2006). However, the past several decades have seen impressive strides toward internationalization at the higher education level, as evidenced by the ever-growing numbers of international students, the incorporation of global citizenry into the majority of universities' vision and mission statements, and the course offerings that reflect a growing attention to global issues.

## Incorporating Global Competency into Existing Curricula

Much of the resistance to global education reform has been generated from those who believe that focusing on skills, global dispositions, and the application of knowledge in problem-based projects would threaten the status of content knowledge in the traditional disciplines.<sup>12</sup> On the contrary, the vast majority of advocates for global competency view it as complementary to existing learning standards and entirely incorporable with existing curricula (Reimers, 2010; Mansilla & Gardner, 2007; Diaz, Massialas, & Xanthopoulos, 1999; Hayden, Thompson, & Walker, 2002; Levine, 2005; Stewart, 2007; American Council on Education, 1995; Friedman, 2007). Michael Levine summarizes this idea succinctly:

"As children learn to read, write and compute, or are introduced to the foundations of scientific inquiry, there is no compelling reason why the international dimensions of these subjects cannot be included. In fact, adding international content is an exciting new way to advance the rigor, breadth, relevance, and intellectual ambition of classroom instruction" (Levine, 2005, 3).

11. For an example of cosmopolitanism in practice, see Glynda A. Hull, Amy Stornaiuolo, and Urvasi Sahni, "Cultural Citizenship and Cosmopolitan Practice: Global Youth Communicate Online" (*English Education*, 2010).

12. See Jim Stergios, *A Step Backward: An Analysis of the 21st Century Skills Task Force Report* (Boston: Pioneer Institute, 2005).

Precisely *how* to go about incorporating global competencies into existing curricula has not been addressed sufficiently within the formal schooling sector.<sup>13</sup>

## Informal and Nonformal Education as a Platform for Global Education

In addition to the endless opportunities to enrich formal curricula with global competency training, there are promising opportunities in informal and nonformal education platforms. Fernando Reimers (2010) points out, “These competencies can be developed in the formal curriculum of instruction, but also in after-school projects, in peer-based projects, or in summer programs.”<sup>14</sup> Along the same lines, international study, work, volunteer, and internship experiences have long been seen as pedagogically enriching opportunities for undergraduate and graduate students (Bell-Rose & Desai, 2005; Commission on the Abraham Lincoln Study Abroad Fellowship, 2005). As explained by the American Council on Education (1995), “... study and internship abroad are among the most valuable educational experiences any student can receive. The benefits of these experiences should be provided to many more students than is now the case ...” Indeed, the number of international students in the United States has been increasing steadily, with nearly 700,000 international students entering the U.S. in the 2008-09 academic year and more than 260,000 American students going abroad for academic credit (see Appendix A) (Open Doors, 2010). While travel-based cultural exchange may not be an ideal option for all students (especially primary and secondary school-age youth), new technologies are making cultural exchange accessible to everyone with a computer and an Internet connection (Menon, 2006; Stergios, 2009; Monahan, 2005; Richardson, 2009). One of many organizations engaging in this work is New York-based Soliya, whose flagship “Connect Program” brings together students from Africa, Europe, the Middle East, and the United States: “Through accredited university courses, Connect Program participants use customized videoconferencing technology to connect directly with their peers from around the world and engage in candid discussions of cross-cultural issues” (Soliya, 2011). New York City’s Global Partners Junior, housed in the mayor’s office, operates similar Web-based cultural exchange programs but for younger students. With the help of a virtual classroom, youth from dozens of cities around the world interact and complete lessons on cultural issues. As never before, students from diverse national, cultural, linguistic, religious, and socioeconomic backgrounds are engaging in very real dialogues, albeit in a virtual space. When considering the age of the students, this example of interaction should be understood as a foundational component of global competency.

## Teacher Professional Development

Time and time again, the single most important factor shown to impact student outcomes is quality teaching (Hanushek & Rivkin, 2006). This situation results in a dichotomy regarding

13. See Jay McTighe and Elliot Seif in “An Implementation Framework to Support 21st Century Skills” (Bloomington: Solution Tree Press, 2010), as in: *Framework* (Partnership for 21st Century Skills online “MILE Guide,” 2009). This source provides some information, but lacks sound implementation cases to serve as a foundation for adoption without further analysis and testing.

14. One To World is the official enrichment program provider for visiting Fulbright students and scholars in the New York area. Through their “Global Classrooms” program, Fulbrighters from around the world visit New York City public schools and run after-school workshops on a wide range of cultural and educational topics with the aim of broadening young people’s perspectives on the world outside New York City. This program enriches both the public school students’ educational experience as well as that of the Fulbright scholars and exemplifies the value of intercultural exchange.

the subject of global competency. On the one hand, many teachers yearn for standards that — instead of valuing rote learning and test-taking skills — challenge students' critical thinking abilities, address real-world problems, and leave space for creativity and flexibility. In that sense, global competency education represents a welcome change of pace and a prospect for the type of teaching and learning that drew many teachers to the profession in the first place. On the other hand, teachers are feeling the burden of trying to impart monumental amounts of content to their students, all the while knowing that their performance as teachers (and in some cases, their salaries) will be judged based on their students' performance on tests. As a result, many teachers would likely resist global competency education, seeing it as yet *another* type of knowledge to cram into an already packed curriculum, and potentially an economic challenge.

For these reasons, the professional development of teachers in relation to global competency education is of the utmost importance. Levine draws a historical comparison to teacher training efforts during the Cold War: "Teachers cannot teach what they do not know. During the Cold War era, our nation made an admirable and important commitment to science and math education by creating the National Science Foundation. A similar national commitment is needed now to prepare teachers to promote international knowledge and skills" (Levine, 2005). With adequate support, teachers would willingly take on the challenge of "globalizing" their lessons and, in so doing, would themselves reflect the kind of innovation, flexibility, and openness to developing a global consciousness that is at the heart of global competency education.

## Models of Global Competency Education

There are numerous successful models for teaching global competency from which educators can glean inspiration and expertise. As early as the 1980s, the well-established International Baccalaureate curriculum already included such goals as "an international perspective in the approach to human problems" and "priority of personal reflection over mere accumulation of knowledge" (Fox, 1998, 67). The Ross School,<sup>15</sup> with campuses in Manhattan, Long Island, and Sweden, "has come to articulate a systematic approach to education consciously tailored for a new era of global interdependence;" (Suárez-Orozco & Sattin-Bajaj, 2010). Mansilla and Gardner conducted a case study in a Boston area school in which "experimental units on [teaching] globalization ... were woven into teachers' regular courses and designed to expand students' learning by inviting them to examine our changing world" (2007, 49). This study found that embedding lessons about globalization into traditional curriculum helped students "reflect on their experiences outside of school with the aid of conceptual tools and perspectives that challenge or expand their initial commonsense intuitions" (Mansilla & Gardner, 2007, 52). In addition, supporting teachers through professional development played an integral role in making the model work.

## Global Competency Assessment

A powerful opportunity exists within assessment despite the growing concern that the culture of accountability and testing in the U.S. is threatening the ability of schools to devote an adequate portion of the day to the development of these skills (Pearlman, 2010;

15. See Marcelo Suárez-Orozco and Carolyn Sattin-Bajaj, eds., *Educating the Whole Child for the Whole World: The Ross School Model and Education for the Global Era* (New York: New York University Press, 2010). Because the Ross School may not be reaccredited and no outcomes-based research has been conducted, this model is slightly controversial and not yet proven effective.

Darling-Hammond, 2010; Levy & Murnane, 2007). Unfortunately, thinking on this subject is becoming ever more polarized (Darling-Hammond, 2010). On one side, many politicians, well-funded foundations, and school-choice advocates call for education that responds to standards, measures, and accountability that zero in on math and language arts testing. On the other side, many teachers, parents, and education experts point to larger structural issues (primarily poverty) that impact student performance and voice concerns over the shift toward rote-learning and test-taking skills rather than holistic learning that includes critical thinking and problem-based learning. An education agenda based around global competency would emphasize the possibility for a middle ground in which teaching toward higher-order cognition and other global competencies could (and should) complement students' disciplinary knowledge (Moore, 2009). Assessment and accountability should remain important objectives in a global competency system, but the methods used may need refinement and expansion in terms of approach and impact.

Assessment and accountability should remain important objectives in a global competency system, but the methods used may need refinement and expansion in terms of approach and impact.

By its very nature, learning is extremely difficult to assess and few cases exist of comparative analysis.<sup>16</sup> The suite of skills, knowledge, and dispositions included in this paper's global competency framework presents a significant challenge when it comes to assessment. Many of the subjects in the first tier, "Empirically Based Knowledge and Skills," fall into a category captured in existing assessments. McTighe and Seif (2010) acknowledge that, "... traditional assessment formats have a place in determining whether students know vocabulary terms, procedures, algorithms and basic facts." Furthermore, in relation to the second- and third-tier skills in the global competency framework, they state:

"... a balanced approach to assessments is critical if 21st-century learning goals are to be appropriately addressed. The majority of assessments should be more open-ended and performance based — designed to reveal whether students meet 21st-century learning goals such as ... formulating responses to essential questions, reflecting on and analyzing important issues ... working collaboratively, and using technology" (McTighe & Seif, 2010).

There is considerable resistance to this type of assessment in the U.S., understandably so when considering the cost, time, and organizational effort that would be required to transition to a more

open-ended assessment approach. In addition, quantitative data have for some time been the accepted measure of assessment, and many school leaders, parents, policymakers, and politicians place the greatest trust in numeric measures of student performance. References to Finland's impressively high performance on international standardized tests such as the Programme for International Student Assessment are nearing cliché status; however, it is important to recognize that the socioeconomic and ethnic backdrop of Finnish schools is far from comparable to that of the United States, let alone what is asked of the citizenry or

16. See Appendix D.

economic productivity. Nevertheless, it is worth mentioning that Finnish students are never subjected to high-stakes standardized tests, and yet they perform very well on international comparisons. Furthermore, Finnish curricula incorporate many of the competencies included in the global competency framework (Pasi Salberg, 2010, on PBS<sup>17</sup>). It is worth considering whether international models such as the ones described in this section will help assuage educators' fears about changing assessment practices and will generate a new style of thinking that embraces assessment suited to global competencies.

## Making the Case for Global Competency Education

The various forces of globalization — increasing economic integration; new information and communication technologies; the massive movement of people across borders; the spread of global cultural forms; and the emergence of global environmental, economic, social, and political challenges — require a thoughtful, strategic, and prompt response from educators. Several decades of thought and writing on the subject of global competency education have resulted in a multitude of conceptualizations about what a truly “global” education should look like. However, the framework in this paper reflects key points of consensus in the literature. In addition, there are a wide variety of perspectives represented when justifying the need for global competency education. However, two major lines of thinking are the most prominent: economic and civic. These areas of thought are related and sometimes overlapping, and many advocates for global competency education espouse philosophies from both. This section will provide a brief overview of the economic and civic perspectives.

## Economic Considerations

A data-driven report by the Partnership for 21st Century Skills<sup>18</sup> outlines a few of the main economic justifications for global (or what it calls “21st century”) education, all of which are well supported across the literature. In short, the report’s authors argue that changes in the global economy have resulted in subsequent changes in labor market needs, especially in economies such as the United States’ that are heavy in service-sector jobs (see Appendix B). Also, students in “competitor nations” have been outperforming American students in international assessments, indicating a possible frailty in these students’ future competitiveness in increasingly global higher education and job markets.

As previously discussed, the dual forces of computerization and outsourcing have indelibly marked the needs of the labor market, especially in countries like the U.S. (Levy & Murnane, 2007). The Partnership for 21st Century Skills (2008) report refers to these as “fundamental changes in the economy, jobs and business” and explains how “... the industrial economy based on manufacturing has shifted to a service economy driven by information, knowledge and innovation.” As of 2008, 86% of jobs in the U.S. were in the service sector (p. 4). In addition, many of the high-paid, professional service sector jobs showed impressive rates of growth (p. 3). These are the very jobs that require the skills, knowledge, and dispositions supported through global competency education. Furthermore, it is likely that service sector jobs will remain a central part of the U.S. economy for years to come since these occupations are difficult, if not impossible, to outsource.

17. [www.pbs.org/wnet/need-to-know/video/pasi-sahlberg-on-why-finland-leads-the-world-in-education/5711/](http://www.pbs.org/wnet/need-to-know/video/pasi-sahlberg-on-why-finland-leads-the-world-in-education/5711/)

18. The report *21st Century Skills, Education & Competitiveness* is available online: [www.p21.org/documents/21st\\_century\\_skills\\_education\\_and\\_competitiveness\\_guide.pdf](http://www.p21.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf)

Jobs in the knowledge economy require additional skills far beyond basic competency and numeracy. High-wage knowledge economy jobs, in particular, require the higher-order thinking skills and cross-cultural competencies listed in the global competency framework. As the Partnership report argues, “Advanced economies, innovative industries and firms, and high-growth jobs require more educated workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams, and produce new knowledge,” (Partnership for 21st Century Skills, 2008, 6). The United States Agency for International Development (USAID) promotes the development of “workforce relevant” skills in developing countries: “The 21st-century knowledge-driven global economy underscores the need for higher levels of education and cognitive skills beyond a primary education. Studies have found that tertiary education attainment has raised developing countries’ productivity and GDP significantly” (USAID, 2011). While USAID is tasked with supporting development outside the United States, its assertion about the need for relevant workforce skills is equally valid in the context of the U.S. or other industrialized economies. Thus, providing American students with an education suited to employment in the knowledge economy should be a top priority. Many scholars also point out that those countries that have reaped the greatest benefit from globalization are those that wisely invested in education (Stewart, 2007; Bloom, 2006). Others draw attention to the fact that a sizeable portion of jobs in the U.S. are tied to international trade (Levine, 2005). As a result, today’s students need to be prepared to “Sell to the world, buy from the world, work for international companies, manage employees from other cultures and countries, collaborate with people all over the world in joint ventures, and compete with people on the other side of the world for jobs and markets” (Stewart, 2007).

As a seminal document, the Partnership report (2008, 8) also points to the gap in educational achievement between “U.S. students ... and their international peers in competitor nations” as carrying considerable economic implications, although specific data on this emerging trend are still sparse while trends are analyzed. The U.S. has long been considered a leader in education and still has the most impressive higher education system in the world. However, as mentioned, international assessments indicate that the U.S. has fallen behind in primary and secondary education. Some argue that American students need to be better prepared in school in order to compete with their international peers once they enter the job market (Stewart, 2007; Friedman, 2007; Hunter, 2004; Parker, in press). However, it seems imperative that American students be prepared to compete for limited spaces at the most competitive and prestigious universities. As mentioned earlier, the number of international undergraduate and graduate students in the United States has risen dramatically in the past several years. Colleges and universities seeking to enroll the best students are concerned primarily with qualifications and are more than happy to accept large numbers of talented international students. The growing number of international students across university campuses is undoubtedly a positive development; however, at the same time American educators need to be sure that the U.S. student population is adequately equipped to compete with its well-trained international peers, both at home and abroad.

## Civic Considerations

Whereas economic arguments supporting global education are about competition, civic arguments are focused on collaboration, working together globally to address major issues of the time and to create a global community marked by tolerance, understanding, and regard for the well-being of others. *Civic* refers to membership and action as a citizen on multiple levels, including local, national, and global. Education supporting thoughtful, responsible, and engaged civic behavior must, in this era, be globally minded:

“... global competency is helpful not only from an economic standpoint but as a cornerstone of democratic leadership and citizenship. Because the boundaries between international and domestic problems have become increasingly porous the demands of government and citizenship now require knowledge of international topics. Elected representatives and voters will be able to make informed decisions about issues such as trade, health epidemics, environmental conservation, energy use, immigration and especially global stability only if educated to understand the global determinants and consequences of those issues and decisions” (Reimers, 2010).

Increasingly now more than ever, citizens around the world must work in concert to address challenges such as climate change and poverty. In order to do so citizens may benefit from knowledge about the world and global dispositions such as openness, tolerance, and adaptability. In an article about global communication technologies and education, Mortimer Zuckerman asserts that, “An impressive amount of research demonstrates how little individuals know about anything political from the names of officials at every level of government including their own local government to how the government works or what issues are all about” (Zuckerman, 2006, 44). According to Zuckerman, media technologies have resulted in a wealth of information to which citizens have unprecedented access; however, they need strong information competency skills and global awareness in order to filter and apply information effectively as citizens. In the context of calls for change to address global issues, Pedro Noguera says, “Students who have been provided with an education that encourages them to think autonomously and critically, to question why things are as they are, to be creative, to solve problems, to learn about different cultures, and to overcome prejudices and fears will have an edge tomorrow,” (Noguera, 2010, 192).

However, global citizenship and global education contribute much more than solving the world’s problems. Global competency skills represent a pathway for discovering and capitalizing on the countless positive results of globalization, including vibrant and expressive global cultural forms and the ability to interact with, to work collaboratively with, and to form meaningful relationships with people of differing national origins. For many, schooling is the first point of entry into a community larger than the family. It is the site where, before anywhere else, people learn to interact with one another as a community that respects and protects the well-being of its members. In the era of globalization, the conceptualization of “community” must extend beyond the walls of the school, the city limits, and even the national borders. Global education is an essential tool for developing this type of mindset in today’s students, as well as for providing the knowledge and skills for them to act upon this mindset effectively, responsibly, and meaningfully.

## Conclusion: Inventing the Future

Students graduating from high school in 1997 never would have heard the word *Facebook*. They would have to wait until the end of 2001 to buy their very first iPod. Graduation pictures were almost certainly snapped on film, not with digital cameras. The world, or at least the Western perspective of it, had not yet been changed irreversibly by the events of Sept. 11, 2001. The dot-com bubble may have burst, but the housing bubble was just beginning to inflate and the approaching financial crisis was unfathomable to most Americans. Equally unfathomable to many was the fact that the first African American president would be elected within the decade.

Whatever developments are approaching in the coming decade, one thing is certain: The world is marked by fast-paced, far-reaching change on a global scale. Educators see this as a challenge, while at the same time a major opportunity exists:

“Those of us who are passionate about the possibilities of education are summoned to design a mode of learning for a world in hyperchange. We are asked to prepare tomorrow’s citizens not for a single, predefined career until retirement but for a life of accelerating, unpredictable velocity. At the same time, we are responsible for transmitting the cumulative wisdom of the past, the fruit of the finest minds and hearts that preceded us, and for imparting the qualities of rigor and compassion that must be cultivated in order to flourish” (Sexton, 2010).

Functioning effectively in a world of “hyperchange” will require knowledge, skills, and dispositions that are markedly different from those required a century or even a half-century ago.

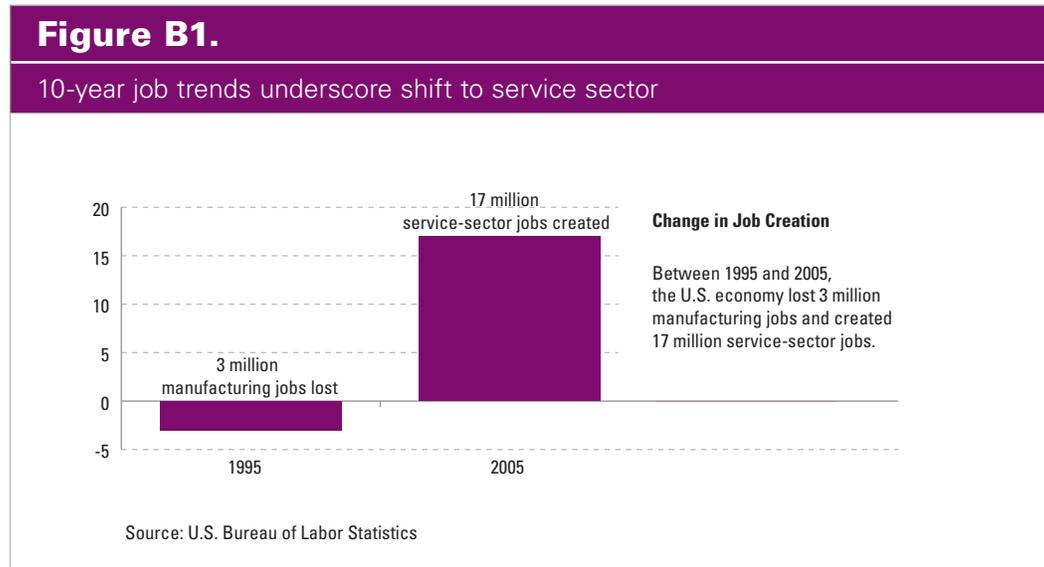
Functioning effectively in a world of “hyperchange” will require knowledge, skills, and dispositions that are markedly different from those required a century or even a half-century ago. Education must provide baseline knowledge about math, science, language, and literature as it always has done. But beyond that, it must nourish students’ abilities to think, create, communicate, and problem solve, as well as nourish their innate capacity for tolerance, understanding, and appreciation of multiple perspectives. Armed with a repertoire of these skills and knowledge, students will be capable of facing yet unknown challenges and, as Reimers says, “inventing a future that enhances human well being.”

While considering economic and other challenges facing the United States today and also preparing for future challenges, one should understand the compelling case this paper presents for the adoption of a global education framework. As stated earlier, with challenges come opportunities. America has always adopted a position of global leadership across many fields, and there is every reason to believe this will be the case in regard to education initiatives surrounding global competency. The challenge American policymakers and educators will face is in managing the unsynchronized state and local systems in a national and global paradigm. Therefore, this paper explores one way of framing global

education by three tiers, with each component depending on the next. This approach creates a foundation on which future programs, projects, or services can be developed to incite or inspire future reform in the United States and abroad.



## Appendix B



[www.p21.org/documents/21st\\_century\\_skills\\_education\\_and\\_competitiveness\\_guide.pdf](http://www.p21.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf)

# Appendix C

<b>Table C1.</b>			
<b>Global Literacy Education in Practice</b>			
<b>School or Organization</b>	<b>Mission</b>	<b>Curriculum &amp; Teaching</b>	<b>Assessment</b>
Ross Schools	Our mission is to change the way education meets the future; to foster interdisciplinary, integrated thinking and innovative leadership; to engage fully in the global community; and to facilitate lifelong learning. <sup>1</sup>	An ascending spiral of historical events plotted chronologically, from prehistory to the future, with the student educationally situated in the center of this expanding form. Such a pivoting vantage point allows multiple, simultaneous, and comparative views of the past and present. It also encourages students to consider local and national events — both past and present — in the context of world history. <sup>2</sup>	Information unavailable.
International Baccalaureate Diploma Programme	The International Baccalaureate aims to develop inquiring, knowledgeable, and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.  To this end, the organization works with schools, governments, and international organizations to develop challenging programmes of international education and rigorous assessment.  These programmes encourage students across the world to become active, compassionate, and lifelong learners who understand that other people, with their differences, can also be right. <sup>3</sup>	IB Diploma Programme students study six courses at higher level or standard level. Students must choose one subject from each of groups 1 to 5, thus ensuring breadth of experience in languages, social studies, the experimental sciences and mathematics. The sixth subject may be an arts subject chosen from group 6, or the student may choose another subject from groups 1 to 5.  In addition the programme has three core requirements that are included to broaden the educational experience and challenge students to apply their knowledge and understanding.	Students take written examinations at the end of the programme, which are marked by external IB examiners. Students also complete assessment tasks in the school, which are either initially marked by teachers and then moderated by external moderators or sent directly to external examiners.  The diploma is awarded to students who gain at least 24 points, subject to certain minimum levels of performance across the whole programme and to satisfactory participation in the creativity, action, service requirement. The highest total that a Diploma Programme student can be awarded is 45 points.

<sup>1</sup> [www.ross.org/podium/default.aspx?t=36392](http://www.ross.org/podium/default.aspx?t=36392)

<sup>2</sup> Integrated Academics, "Educational Philosophy," Ross School, [www.ross.org/podium/default.aspx?t=36423](http://www.ross.org/podium/default.aspx?t=36423)

<sup>3</sup> [www.ibo.org/mission](http://www.ibo.org/mission)

## Appendix D

Assessment and measurement of global competency is an area currently undeveloped and requiring additional focus and attention. As discussed in the report by the Partnership for the 21st Century Skills titled “Assessment of 21st Century Skills,” assessments are not currently widespread in use. The report does, however, provide some examples of assessment measures that are being utilized, and provide a solid foundation for further development.

1. The ETS Information, Communication, and Technology (ICT) Literacy Assessment is a 75-minute scenario-based test that is designed to measure students’ ability to use digital technology, communication tools, and networks to solve information problems. The test measures the ability to use critical thinking skills to define, access, manage, integrate, evaluate, create, and communicate information in a technological environment. The Core Level assessment is designed for students transitioning from high school to college, and for first- and second-year students at higher education institutions. The Advanced Level is for rising college juniors and for students transitioning from two-year to four-year institutions.
2. At Coventry High school in Rhode Island, students post online portfolios demonstrating not only their mastery of a content area, but how they mastered it. Students post their work using both text and multimedia presentations. They also include reflective comments about the process of learning, noting, for example, when collaborative exercises worked well and what information was gained as a result. Teachers gain a more thorough and nuanced view of a student’s progress through this type of classroom-based assessment tool.
3. The Collegiate Learning Assessment (CLA), developed by the Council for Aid to Education, is a national effort that provides colleges and universities with information about how well their students are doing with respect to critical thinking, analytic reasoning, and written communication. Each CLA performance task requires students to use different sets of critical-thinking, analytic-reasoning, problem-solving, and written-communication skills to answer several open-ended questions involving a hypothetical, but realistic, situation. A high school version has been developed and is currently being piloted.
4. Britain’s new Key Stage 3 (for ages 12–13) ICT Onscreen ICT Test assesses both content area and thinking skills online. It requires students to use their ICT skills to solve a set of complex problems involving research, communication, information management, and presentation. Test activities take place within a “virtual town,” with its visual and informational assets (text, pictures, data, and offline articles, maps, photographs, diagrams, tables, charts, and interview notes or transcripts). Students use these documents to draft their answers to the task’s questions within the 90-minute test period.

Source: Partnership for the 21st Century Skills (2006), “Assessment of 21st Century Skills,” Online report available at: [www.p21.org/documents/Assessment092806.pdf](http://www.p21.org/documents/Assessment092806.pdf).

## Appendix E

This summary of key elements of the main frameworks for “global” or “21st century” education is based upon Chris Dede’s (2010) chapter in *21st Century Skills: Rethinking How Students Learn*. While a number of frameworks have been developed by various organizations, the most prevalent, frequently cited, and well-known is the framework provided by Partnership for 21st Century Skills.

Table E1. Major Frameworks for 21st Century Learning	
Organization	Key Elements
<p><b>Partnership for 21st Century Skills</b> www.p21.org</p>	<ul style="list-style-type: none"> <li>• <b>Core Subjects:</b> English, reading and language arts, mathematics, economics, science, geography, history, government, and civics</li> <li>• <b>21st Century Themes:</b> Global Awareness, Financial, Economic, Business and Entrepreneurial Literacy, Civic Literacy, Health Literacy, Environmental Literacy</li> <li>• <b>Learning and Innovation Skills:</b> Creativity and Innovation, Critical Thinking and Problem Solving, Communication and Collaboration</li> <li>• <b>Information, Media and Technology Skills:</b> Information Literacy, Media Literacy, ICT (Information, Communications and Technology) Literacy</li> <li>• <b>Life and Career Skills:</b> Flexibility and Adaptability, Initiative and Self-Direction, Social and Cross-Cultural Skills, Productivity and Accountability, Leadership and Responsibility</li> </ul>
<p><b>enGauge Framework</b> (North Central Regional Education Laboratory and the Metiri Group) www.metiri.com/case_engauge.html</p>	<ul style="list-style-type: none"> <li>• <b>Digital-Age Literacy:</b> Basic, scientific, economic, and technological literacies; visual and information literacies; multicultural literacy and global awareness</li> <li>• <b>Inventive Thinking:</b> Adaptability, managing complexity, self-direction, curiosity, creativity, and risk taking; higher-order thinking and sound reasoning</li> <li>• <b>Effective Communication:</b> Teaming, collaboration, and interpersonal skills; personal social and civic responsibility; interactive communication</li> <li>• <b>High Productivity:</b> Prioritizing, planning, and managing for results; effective use of real-world tools; ability to produce relevant, high-quality products</li> </ul>
<p><b>Organisation for Economic Cooperation and Development (OECD) Competencies</b> www.oecd.org</p>	<ul style="list-style-type: none"> <li>• <b>Using Tools Interactively.</b> Use language, symbols, and texts interactively: use knowledge and information interactively: use technology interactively</li> <li>• <b>Interacting in Heterogeneous Groups.</b> Relate well to others, cooperate and work in teams; manage and resolve conflicts</li> <li>• <b>Acting Autonomously.</b> Act within the big picture; form and conduct life plans and personal projects; defend and assert rights, interests, limits, and needs</li> </ul>
<p><b>Liberal Education and America’s Promise (LEAP) Essential Learning Outcomes</b> www.aacu.org/leap/vision.cfm</p>	<ul style="list-style-type: none"> <li>• <b>Knowledge of Human Cultures and the Physical and Natural World:</b> Sciences and mathematics, social sciences, humanities, histories, languages, and the arts, focused by engagement with big questions, both contemporary and enduring</li> <li>• <b>Intellectual and Practical Skills:</b> Inquiry and analysis, critical and creative thinking, written and oral communication, quantitative literacy, information literacy, teamwork and problem solving</li> <li>• <b>Personal and Social Responsibility:</b> Civic knowledge and engagement (local and global), intercultural knowledge and competence, ethical reasoning and action, foundations and skills for lifelong learning</li> <li>• <b>Integrative and Applied Learning:</b> Synthesis and advanced accomplishment across general and specialized studies demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems</li> </ul>

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