

Global Learning for Global Results

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Thematic Area: The Role of Universities in the Implementation of the SDGs

Introduction

The Sustainable Development Goals provide an ambitious blueprint for alleviating poverty and improving lives around the planet. Educational systems have a responsibility to prepare students to take on the global challenges presented by these goals. This paper will focus on one approach that is gaining traction in the higher education sector. This approach is broadly known as “global learning”. It encompasses more traditional forms of international education (e.g. study abroad) as well as other types of opportunities for students unable to travel abroad. It provides students with more holistic understandings of global problems, provides them with intellectual tools, and empowers them with the agency they need to tackle these problems.

The view of global learning presented in this paper is based on some of the initiatives, programs and research that we have encountered through our programming at NAFSA: Association of International Educators.¹ NAFSA is the world’s largest association dedicated to international education. With approximately 10,000 members in 150 countries, NAFSA members are helping to promote the development of global competencies in students and professionals around the world. NAFSA’s work supports universities, educators and professionals in fostering understanding and respect among people of diverse backgrounds and perspectives.

The members of NAFSA believe it is essential that students become both cross-culturally proficient and globally aware. To tackle the global problems that the Sustainable Development Agenda seeks to address, students must understand the ways in which these problems are interconnected. They must also feel empowered to take responsibility for implementing solutions that will help achieve the Sustainable Development Goals.

This paper will provide strategies and best practices for helping universities to prepare students with the cross-cultural and global competencies needed to implement these solutions. These competencies² often include:

- Global Self-Awareness
- Perspective Taking
- Cultural Diversity
- Personal and Social Responsibility
- Understanding of Global Systems
- Application of Knowledge to Contemporary Global Contexts.

¹ See www.nafsa.org/colloquia and www.nafsa.org/IZNCurriculum for additional information.

² American Association of Colleges & Universities Global Learning VALUE Rubric: <https://www.aacu.org/value/rubrics/global-learning>

Strategies for the development of supportive international partnerships will be shared. This paper will also offer promising practices for integration of global learning opportunities into curriculum. Examples from professional programs in:

- Business;
- Science, Technology, Engineering and Mathematics (STEM); and
- the Health Professions

will be shared along with cross-disciplinary examples.

Through partnerships with universities, professional schools and organizations around the world, NAFSA has developed strategies and best practices to promote the development of these crucial competencies in students. This paper will highlight and provide resources for those wishing to learn more.³

Overview of “Global Learning”

Brief History

In 1981, the United Nations University used the term “global learning” in one of its strategic plans. The division of Global Learning “focused on integrative learning, defining global problems, and addressing solutions” (Landorf & Feldman, 2017, p. 163) The term “global learning was coined deliberately as a double entendre, ‘meant to convey both the sense of learning as a global process that must include all levels of society, and the sense of learning to think globally, in the recognition that the world is a finite, closely interconnected, global system” (Soedjatmoko & Newland, 1987, p. 221).” (ibid.).

At a Global Learning Symposium in 1985, global learning was described “as a process that was intended to link issues horizontally, ‘not only across disciplines and professions but also across human and natural communities”” (Soedjatmoko, and Kathleen Newland , 1982).

Definitions

There has been a lack of uniformity regarding operational definitions of “global learning”. Over the past few years several key definitions have gained prominence as both researchers and program developers have found them to be helpful. These include those developed by:

- Association of American Colleges & Universities (AAC&U)
- American Council on Education (ACE)’s Center for Internationalization and Global Engagement
- National Survey of Student Engagement (NSSE) Global Learning Module

In addition, the work of scholars such as Larry Braskamp, Hilary Landorf, and Hilary Kahn have also gained traction among global learning adoptees. (See for example: Engberg, Jourian & Davidson 2016; Kahn & Agnew, 2017; Kinzie, Helms & Cole, 2017; Landorf & Feldman, 2017; Lee, 2016; Mathews & Landorf, 2016).

The definition focused on in this paper is that of the AAC&U’s Global Learning Valid Assessment of Learning in Undergraduate Education (VALUE) Framework.⁴ This framework

³ Much of NAFSA’s work is focused on supporting higher education institutions in North America. Although there are a wealth of global learning examples around the world, this paper will focus on the unique educational environment of North America.

⁴ In addition to its own definition, the AAC&U provides a list of definitions for “global learning” that have been used by member institutions across the United States. These definitions may be found here:

<https://www.aacu.org/global-learning/definitions>

was developed in collaboration with higher education faculty, researchers, and administrators from 2007 – 2009. The Global Learning VALUE Rubric is widely used as it, along with the other rubrics that were developed, was “approved for use in meeting national standards for accountability established by the Voluntary System of Accountability (VS).” (“VALUE,” n.d., para. 5).

Definition

Global learning is a critical analysis of and an engagement with complex, interdependent global systems and legacies (such as natural, physical, social, cultural, economic, and political) and their implications for people's lives and the earth's sustainability. Through global learning, students should 1) become informed, open-minded, and responsible people who are attentive to diversity across the spectrum of differences, 2) seek to understand how their actions affect both local and global communities, and 3) address the world's most pressing and enduring issues collaboratively and equitably.

The rubric itself lists six areas of global learning in which to measure students' capacity:

- Global Self-Awareness
- Perspective Taking
- Understanding Cultural Diversity
- Personal and Social Responsibility
- Understanding Global Systems
- Applying Knowledge to Contemporary Global Contexts

As with many of the other definitions, global learning in this context requires that students engage with themselves (often via reflection) and others in ways that help them to better understand the interconnectedness of global systems, and to develop a sense of agency and responsibility for “addressing the world's most pressing and enduring issues”. This is particularly appropriate when considering how global learning activities within higher education can prepare students to take on the global challenges presented by the Sustainable Development Goals.

Integration into Curriculum

Integrating global learning into academic programming – especially in professional schools, can be accomplished in a variety of ways. International partnerships often play key roles, through facilitating student exchanges (e.g. study abroad), collaborative research, or providing internship opportunities for students in locations around the world. Integrating these high-impact co-curricular experiences into academic curriculum is important as it provides global learning experiences to a broader student population; including non-traditional students, underserved students, and others who may not be able to travel abroad with the same frequency (Rhodes, Loberg, & Hubbard, 2014).

Since 2009, NAFSA has hosted annual colloquia focusing on global learning in the curriculum.⁵ These colloquia have highlighted innovative examples of global learning from around the world. This section of the paper will present select examples of global learning; including global initiatives, international partnerships, and other ways of incorporating global learning into the curriculum. Additional case studies include Lee, 2016; Shadaima, Lipscomb, Strier, Postan-Aizik, Leviton & Olsen, 2016; Whitehead, 2016.

⁵ Please see www.nafsa.org/colloquia for the complete list.

Discipline – Specific Examples

This section of the paper will present select⁶ examples of Global Learning; including global initiatives that influence program design, international partnerships, and other ways of incorporating global learning into the curriculum. Additional case studies include Dimitrov & Hague, 2017;

Business

The Association to Advance Collegiate Schools of Business (AACSB) International is the world's largest business education alliance. The AACSB vision

is to transform business education for global prosperity. Business and business schools are a force for good, contributing to the world's economy, and AACSB plays a significant role in making that benefit better known to all stakeholders—serving business schools, students, business, and society.⁷

In 2011, the AACSB International Globalization of Management Education Task Force (IGMTF) developed a report on the globalization of management education. It “revealed a sizeable gap between what the world needs and what management educators generally do” in terms of “emerging global trends in higher education and cross-border business” (Bruner & Iannarelli, 2011, p. 232). As the report noted:

“...the globalization of business has led to huge derived demand for global business education. Indicators of globalization in business are likely to underestimate the corresponding needs for knowledge, skills, and attitudes that align with current and future needs of the business profession.” (IGMTF, 2011, p. 9).

In response to these emerging trends, AACSB conducted extensive research and facilitated dialogue, resulting in another report “A Collective Vision for Business Education” (AACSB, 2016). This document was developed over several years based on research, reflection, and feedback from “thousands of individuals engaged in discussion and debate” (p. 18). It argues that “Business is Essential to Global Prosperity” and that business is “a key enabler for each of the [17 SDG] goals” (p. 12).

CIBERS

The US Congress created 17 Centers for International Business Education and Research (CIBERS)⁸ “to increase and promote the nation’s capacity for international understanding and competitiveness.⁹ This is accomplished through the promotion of faculty development, experiential learning, international business research, and academic and business outreach. Per the program’s website, as of this writing CIBERS have provided 176,752 international experiences, impacted 823,901 businesses and 29,786,616 students. 110 languages have been taught.

Institutional Example

Babson College has extensively embraced intercultural competence within its curriculum. In a 2016 presentation, Amir Reza, PhD Vice Provost, International & Multicultural Education,

⁶ Additional examples may be found at <http://www.nafsa.org/colloquia> (NAFSA’s Global Learning Colloquia Series and www.nafsa.org/SimonAward (featured programs and institutions that have won the Simon Award for Comprehensive Internationalization).

⁷ Please see: <http://www.aacsb.edu/about>

⁸ List of 17 CIBERS in [Appendix 1: List of Centers for International Business Education and Research \(CIBERS\)](#)

⁹ Please see: <http://us-ciberweb.org/>

provided this definition of intercultural competence: “The ability to communicate and behave appropriately and effectively in an intercultural situation utilizing attitudes, knowledge and skills to bridge across differences for innovation and to explore commonalities that united us.”

In a research study, he tied this definition to Bennett’s (1993) theory of intercultural development.

INTERCULTURAL DEVELOPMENT CONTINUUM

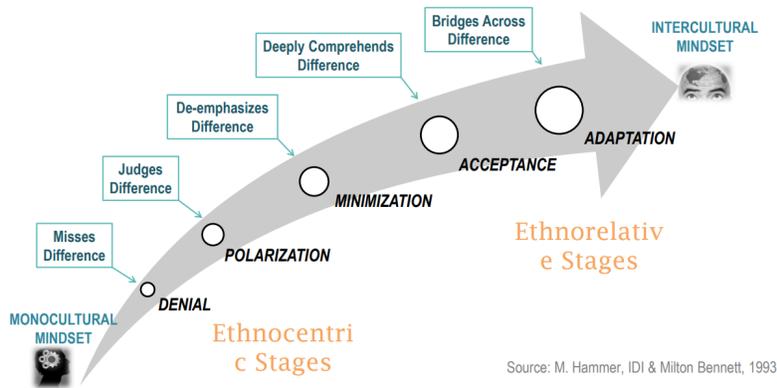


Figure 1: Intercultural Development Continuum for Babson College
Source: Reza, 2016

This study looked at a diverse group of students engaged in a multi-destination study abroad program. Findings demonstrated that by the end of the program no students were in ethnocentric states and several had progressed to “Adaptation”. The results of this study indicated that when designing international global learning opportunities, three factors should be considered:

- Faculty need to be intentional about designing how students engage with intercultural situations.
- Programs should be explicitly designed to accelerate learning
- Diversity among the students participating is a “compelling educational imperative.”

Science, Technology, Engineering, and Mathematics (STEM)

Global Initiatives

Global Grand Challenges

The “Grand Challenges”¹⁰ for engineering were selected in 2008 by an international committee under the auspices of the US National Academy of Engineering. These 14 “game-changing goals for improving life on the planet” were divided into four cross-cutting themes of sustainability, health, security, and “joy of living”.

ABET

Michael Milligan (2017) Executive Director and CEO of ABET (global accreditation board for engineering and technology) notes that ABET Accreditation provides assurances “that a

¹⁰ Grand Challenges: <http://www.engineeringchallenges.org/challenges.aspx> Please see [Appendix 14 Grand Challenges for Engineering](#) for the complete list

program meets the quality standards that produce graduates prepared to enter a global workforce.” ABET is globally engaged with 18 memoranda of understanding (MOUs) with international accreditors and numerous mutual recognition agreements. ABET accredits 3,709 programs at 752 institutions in 30 countries. ABET works closely with the International Federation of Engineering Societies (IFEES), the Global Engineering Deans Council (GEDC), and the Latin American and Caribbean Consortium of Engineering Institutions (LACCEI). Notable engineering programs include Engineers without Borders¹¹, Engineering for Change¹² and Global E³¹³. International

American Chemical Society (ACS)

Christopher LaPrade (2017) of the American Chemical Society (ACS) noted that STEM research already is international in practice. As noted by Michalska-Smith (2015), international collaboration in research is correlated with better journals and more citations. The ACS charter mandates global involvement. To date, 24,000 of its 157,000 members are outside of the United States. Its international center has been promoting and facilitating increased international collaboration through student exchange programs, funding opportunities, and providing a virtual hub of resources. As of 2017, this online center has received over 130,000 unique visitors to its hub.

W.E. Kelly (2016) notes that sustainability is explicitly included in the Model Code of Ethics for the World Federation of Engineering Organization (WFEO). Kelly notes that sustainability requires integration of the engineering sciences with the humanities as “[t]he infrastructure – inequality – resilience nexus is in many respects an integration issue” (p. 1). Multiple organizations have developed unique approaches for integrating STEM Education with other disciplines to advance sustainable development. A selection will be outlined here.

Institutional Examples

Worcester Polytechnic Institute (WPI) provides global projects-based learning capstone projects for all graduates. Students travel to more than 40 off-campus locations across six continents to tackle unstructured problems in ways that are meaningful to local sponsors and culturally-appropriate for the communities they work in (Jiusto, McCauley, Ogilve, & Vaz, 2015).

Purdue University convened a Global Competency Task Force in 2015 to ensure that graduates were prepared to work in a global environment. This task force outlined a goal of 100% global competency for engineering students (Jesiek, 2016).

Health

As the recent Zika and Ebola outbreaks have demonstrated, diseases do not respect national borders. The interdependent nature of health systems around the world has been highlighted by multiple organizations which have gathered together scholars, practitioners, and academics across the health professions to address the increased need for global learning in education for the health professions. These include the Bill & Melinda Gates Foundation, the Consortium of Universities for Global Health (CUGH), a *Lancet* Commission on Medical Education for the 21st Century, and the Association of Schools and Programs of Public Health (ASPPH) among many others.

Global Initiatives

¹¹ Engineers without Borders: www.ewb-international.com

¹² Engineering for Change: www.engineeringforchange.org

¹³ Global E³: www.globale3.studioabroad.com

The Bill and Melinda Gates Foundation launched what would become the Grand Challenges initiative in 2003. This family of initiatives was designed to foster innovation in health and other areas of development (“Grand Challenges: Solving global health and development problems for those most in need” n.d.).

The Consortium of Universities for Global Health (CUGH) was founded in 2008 with funding from the Bill & Melinda Gates Foundation and The Rockefeller Foundation (“Mission and Background”, n.d.) and currently serves “over 145 academic and other institutions from around the world engaged in addressing global health challenges” (ibid., para. 1).

In 2010, a *Lancet* Commission published its call for major reform in training of healthcare professionals: “Health professionals for a new century: transforming education to strengthen health systems in an interdependent world” (Frenk, et al.).

In 2011, the Association of Schools and Programs of Public Health (ASPPH) established the Framing the Future Task Force to advance public health education and better prepare graduates for success. Chair Donna Petersen noted that one of the driving factors of this task force was the “Emergence of global competency as essential (2014). This task force began with the development of a Global Health Competency Model based on the premise that “global health is public health” (Fried et al., 2010).

A Consortium of Universities for Global Health (CUGH) Global Health Competency subcommittee was formed in 2013 to address the need for global health competencies applicable to “all fields relevant to global health” (Jogerst et al., 2015, p. 239). These competencies were compiled and published in the *Annals of Global Health*. A tool kit for incorporating these competencies into educational programming is currently available on the CUGH website: http://cugh.org/sites/default/files/CUGH_GHE_Competency_Tool-kit_2017.pdf.

Institutional Examples

Institutions such as Drexel University, the University of South Florida, the University College Dublin, and Mbarara University of Science and Technology incorporated global learning into their programming in a variety of ways. Brief examples will be highlighted here.

Drexel University

Drexel University’s health programs embrace frameworks which are “globally attuned” (Marquez, 2016). Ana Diez Roux, Dean of the Dornsife School of Public Health stated the following in the school’s latest strategic plan:

We know that in order to improve health, we must apply multisectoral approaches involving not only the proximal actions of the health care system, but also actions that address the distal social and economic drivers of health. We must engage with sectors such as education, housing, urban planning, social services and the economy. We must partner with diverse communities and organizations. We must use novel data and methods to understand the drivers of health and to identify what interventions and policies work. We must grapple with the enormous challenge of disparities in health by social class, race and ethnicity, and place. We must understand and address the health implications of urbanization, migration, social inequalities, globalization, and environmental change. (Dornsife School of Public Health, 2016, p. 3)

The **University of South Florida (USF)** created a department of global health in 2004 (Petersen, 2014). All public health programs at USF incorporate global learning as a core

component of curriculum. The department provides guidance for the development of policy and implementation. This department offers a Masters International Program in collaboration with the Peace Corps, organizes international study abroad and field experiences around the world, supports international research and works to embed these international experiences into curriculum.

University College Dublin (UCD) in Ireland and **Mbarara University of Science and Technology (MUST)** in Uganda developed a partnership to ensure their students gained “knowledge and understanding of global health issues and an awareness of different health systems” (O’Sullivan, Kazibwe, Whitehouse, & Blake, 2017, p. 1). Both universities are leaders in their respective countries. Students from UCD had historically undertaken elective clinical placements in low and middle-income countries. In 2013, a partnership was formed with a UCD-associated charity and a rural hospital in Uganda. The Physiotherapy program at MUST began in 2007 and developed a partnership with this hospital which evolved into a partnership between MUST and UCD. After several years of strengthened exchanges by the two universities, the representatives agreed that joint curriculum would be beneficial to all involved. A series of global learning workshops using an appreciative inquiry (AI) methodology was created. The authors note that “using this model promotes collective strengths to problem solve and envisage a better situation in the future” (p. 3). The success of these workshops has led the project leads to begin embedding these learning activities into “relevant modules” which will be submitted as part of accreditation processes” (p.6). The authors “believe that the proposed global learning partnership will strengthen curricula, particularly in the development of soft skills...the development of which are an integral part of accreditation standards” (p. 6).

Cross-Disciplinary Examples

As noted above, global learning can be incorporated into curriculum in multiple disciplines. As many of the examples shared above demonstrated, these global learning opportunities are often inherently interdisciplinary.¹⁴ Global learning is often integrated across the disciplines via Capstone or General Education requirements. Worcester Polytechnic Institute (WPI)’s projects-based learning capstone requirement is a good example of this. The American Association of American Colleges & Universities provides multiple case studies of ways in which its Global Learning framework has been used in general education programs and across the curriculum.¹⁵

Interdisciplinary Courses (e.g. HIV, Genocide)

As noted above, innovative approaches to integrating global learning into curriculum abound. Fox, Finer, Khourey-Bowers, and Heaphy (2016) provide a detailed overview of the evolution of two interdisciplinary courses at Kent State University. These courses engaged students with global learning around the issues of HIV and Genocide. These two courses were collaboratively developed over a period of several years, using the AAC&U VALUE rubric as a guide.

¹⁴ See also the Worldwide Universities Network (WUN) which brings together 22 universities from 12 countries on five continents “to drive international research collaboration and address issues of global significance” (About WUN: <https://www.wun.ac.uk/about.html>). In partnership with governments, international organizations and industry, the network is focused on four “globally significant themes”:

- Responding to Climate Change
- Public Health (Non-Communicable Disease)
- Global Higher Education and Research
- Understanding Cultures.

¹⁵ See, for example Global Learning Publications on the AAC&U website: <https://www.aacu.org/resources/global-learning/publications>

Unfortunately, despite positive student outcomes, lack of institutional support has prevented these programs from growing (personal correspondence, July 27, 2017).

Barriers to Global Learning

As with Fox et al.'s programs, lack of institutional support can thwart attempts to incorporate global learning into the curriculum and across campus. In 2016, the author administered a survey to participants in a series of global learning colloquia. The results of this survey indicated that the following were barriers to integrating global learning into programs across the country:

- Lack of a clear vision
- Little appreciation for global learning
- Lack of faculty/staff interest
- Lack of adequate faculty expertise
- Lack of professional development opportunities on the topic of global learning
- Lack of information about useful strategies and resources for global learning.

As O'Sullivan et al. noted, their global learning project was ambitious and "in order to be sustainable, the importance of long-term interinstitutional commitment and further funding cannot be ignored" (2017).

The section below will provide examples of how these barriers have been overcome.

Appropriate assessment at the student level, as well as at the program and at the institutional level help a great deal.

Strategies to Support Global Learning

Assessment

Appropriate assessment of outcomes is critical to the success of any attempt to incorporate global learning into programming. The adage "what gets measured gets done" applies here. The ability to provide data on student learning outcomes that are aligned with institutional goals can be particularly helpful in obtaining institutional support.

As mentioned above, the AAC&U Global Learning VALUE Rubric is one of the more widely used assessment tools. Two related assessments are often used by programs attempting to measure aspects of global learning: the **Intercultural Development Inventory (IDI)**¹⁶ and the **Global Perspective Inventory (GPI)**. Much has already been written about these two assessments (e.g. Landorf & Feldman, 2017).

Madeline Green (2013) provided an overview of these three instruments and presented three case studies in her publication *Improving and Assessing Global Learning*. She reminds us that any assessment of learning outcomes should focus on improving student learning, but should also "be grounded in the larger context of institutional assessment efforts and culture" (p. 10). Several enterprising institutions have incorporated global learning into their regional accreditation plans as will be discussed below.

Accreditation

As noted above, professional disciplinary accreditors have been engaged in global accreditation for quite some time. In Green's 2015 publication *Mapping the Landscape: Accreditation and the International Dimensions of U.S. Higher Education*¹⁷ she provides an overview of the current state of accreditation and the international dimensions of higher education in the United States. She provides a sampling of accreditation standards referring to global learning in the curriculum

¹⁶ A Google Scholar search produced 2,730 results.

¹⁷ Green, Madeleine F. "Mapping the landscape: Accreditation and the international dimensions of US higher education." (2015).

(pp. 24-27) – some of which were discussed above. Green also focuses on the ways in which regional accreditation can affect efforts to bring global learning into curriculum.

William Plater at the 2013 NAFSA Symposium on Leadership gave a talk on *Internationalization, Accreditation, and Alignment: The Changing Ecology of Higher Education*. He noted that accreditation should be used as a catalyst by administrators (and others involved with internationalization efforts) to drive agendas for change (West, 2013). He noted that the Western Association of Schools and Colleges (WASC) made a strategic move into international accreditation in response to several factors; including:

- Bologna processes
- Degree qualifications frameworks
- Competency based learning
- Mobility of faculty and students
- Growing demand for social and economic return on investment

Green expands on these ideas. In addition, she provides information about policies and guidelines used by regional accrediting bodies that impact efforts to bring global learning into the curriculum (2015, pp. 8-9).

Examples

Universities across the United States have incorporated aspects of global learning into regional accreditation processes – often with the goal of obtaining additional visibility and institutional support for incorporating global learning into programming.

Georgia Institute of Technology

Green (2013) uses the Georgia Institute of Technology (Georgia Tech) as an example. She notes that planning to incorporate global learning into the regional accreditation process began in 2003 (p. 8). Accredited by the Southern Association of Colleges and Schools Commission on Colleges, Georgia Tech included its International Plan (IP) into its Quality Enhancement Plan (QEP) – a five-year plan to progress in areas chosen by the institution. Key elements of this plan included freedom to “opt-in” and customize approaches by departments as well as modifications to existing programming (as opposed to adding new course and credit requirements) (ibid.). “[G]lobal competencies within the context of the student’s major” (ibid.) were emphasized. Georgia Tech measured student learning outcomes using the Intercultural Development Inventory (IDI). Outcomes from the five-year QEP indicated “higher gains in intercultural sensitivity” for graduates involved with the IP (p. 17). Green notes that this process increased the visibility and buy-in for its IP across campus and was thus able to continue its IP (with revisions) after the five-year QEP ended.

Kennesaw State University included global learning in its (QEP) for its accreditation process with Southern Association of Colleges and Schools Commission on Colleges as well (Whittlesey, 2014). This was part of a lengthy process¹⁸ of internationalizing the campus and bringing global learning into the curriculum. The purpose of developing this QEP was to “raise global learning to the top tier of KSU’s educational priorities” (ibid.). This QEP, *Global Learning for Engaged Citizenship*, was first incorporated into the university’s 2007-2012 Strategic Plan. The university used the following definitions of global learning:

- An educational process that enhances one’s competencies for participating productively and responsibly in the diverse, international, intercultural, and interdependent world.

¹⁸ See [Appendix 3: Kennesaw State University \(KSU\) Timeline](#)

- Opportunities exist in the academic curriculum and in cocurricular experiences, and can be pursued both at home and abroad. (ibid.)

This strategy resulted in several key examples of leadership, financial support, and buy-in from across the institution; including:

- Elevation of QEP Director to Vice Provost for
- Strategic Engagement & Global Initiatives
- Hiring of a Director of Global Engagement
- Global Learning Coordinators for each college, Student Success, CETL, and IGI

It also resulted in increased funding in support of study abroad programming (ibid.)

These institutional changes resulted in impressive changes across the institution and in student learning.¹⁹ For example, global learning courses went from 277 (AY 2007 –08) to 510 (AY 2011-12); an 84% increase in 5 years. Global Learning programs increased from 33 to 73 (121% increase) over the same time span.

Conclusion

This paper has provided a brief overview of “global learning” across higher education. It is hoped that the examples presented here are useful in considering ways in which educational systems might better prepare students to take on the global challenges presented by the Sustainable Development Goals.

¹⁹ Please see [Appendix 4: Kennesaw State University \(KSU\) Results](#)

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Appendix 1: List of Centers for International Business Education & Research (CIBERs)

- Brigham Young University
- George Washington University
- Georgia Institute of Technology
- Georgia State University
- Indiana University
- Michigan State University
- San Diego State University
- Temple University
- Texas A&M University
- The Ohio State University
- The University of Texas at Austin
- University of Colorado Denver
- University of Connecticut
- University of Maryland
- University of Miami
- University of South Carolina
- University of Washington

Source: Institutions: <http://us-ciberweb.org/institutions/>

Appendix 2: 14 Grand Challenges for Engineering

1. MAKE SOLAR ENERGY ECONOMICAL
2. PROVIDE ENERGY FROM FUSION
3. DEVELOP CARBON SEQUESTRATION METHODS
4. MANAGE THE NITROGEN CYCLE
5. PROVIDE ACCESS TO CLEAN WATER
6. RESTORE AND IMPROVE URBAN INFRASTRUCTURE
7. ADVANCE HEALTH INFORMATICS
8. ENGINEER BETTER MEDICINES
9. REVERSE-ENGINEER THE BRAIN
10. PREVENT NUCLEAR TERROR
11. SECURE CYBERSPACE
12. ENHANCE VIRTUAL REALITY
13. ADVANCE PERSONALIZED LEARNING
14. ENGINEER THE TOOLS OF SCIENTIFIC DISCOVERY

Source: NAE Grand Challenges for Engineering:

<http://www.engineeringchallenges.org/challenges.aspx>

Appendix 3: Kennesaw State University (KSU) Timeline

- “Year of” Country Study Program (began in 1984- 85)
- American Council on Education’s (ACE) Global Learning for All Project (2003)
- KSU’s International Center to the Institute for Global Initiatives (IGI) (2003)
- KSU’s QEP on Global Learning for Engaged Citizenship (2007-12)
- American Association for College and University’s (AAC&U) Shared Futures General Education for Global Century project participant (2010-11)
- Winner of Senator Paul Simon Aware for Comprehensive Campus Internationalization (2011)
- Year of Ghana (2012-2013)

Source: Whittlesey, 2014

Appendix 4: Kennesaw State University (KSU) Results

\$	2007-08	2008-09	2009-10	2010-11	2011-12	5 Yr. % Increase
Global learning scholarships awarded to students	0	\$541,235	\$746,272	\$702,032	\$613,373	61,337,300 %
Global learning scholarship awarded to faculty	0	\$7,978	\$33,994	\$25,115	\$34,000	3,400,000 %
Total QEP funding (internal-institutional, other internal, and external)	\$661,542	\$1,479,120	\$1,953,688	\$1,086,830	\$2,644,143	300%

Note: More Impact of KSU's QEP data can be found at <http://www.kennesaw.edu/glcc/>
Global Learning Certification at <http://www.kennesaw.edu/globalengagement/index.html>

Source: Whittlesey, 2014

Impact of QEP: Direct Assessments of Student Learning

of Baccalaureate Students Meeting/Exceeding Global Learning Outcome Criteria

Undergrad. Degree Program	GL Outcomes Assessed	Assessment Measure	# Students	2009-10	2010-12
All 11 BS Education degrees (across 5 colleges)	Intercultural Engagement	Summative assessment at the end of student teaching	1247	99%	92%
BBA in Accounting	Global Perspectives	Course-embedded Assessment (AACT 3100 and 4300)	62 and 182	68% and N/A	N/A and 62%

All other 8 BBA degrees	Global Perspectives	Course-embedded (ECON 2200 and MGT 4199)	402 and 326	N/A and 88%	65% and 84%
BA in Geography and BS in Geographic Info. Science	Global Perspectives Intercultural Engagement	Senior Seminar projects (scoring rubric for both outcomes)	53	N/A	95%
BA in History	Global Perspectives	Senior seminar assessment	105	98%	97%
BA in International Affairs	Global Perspectives	Senior seminar exam	26	N/A	50%
BA in Modern Language and Culture	Intercultural Engagement Global Perspectives	Oral Proficiency Interview (% at Intermediate High level): Linguistics Project	35 and 68	43% and 75%	58% and 68%
BS in Anthropology	Global Perspectives	Course-embedded assessment	24	N/A	88%
BSN Nursing	Global Perspectives	Standardized test (ATI Testing): Preceptor Survey (39%) returned	154 and 66	N/A and N/A	77% and 96%

Impact of QEP: Indirect Assessments of Student Learning
 NSSE Data- Student Perceptions of KSU's Campus Climate Supporting Global Engagement

		"Quite a Bit" or "Very Much"		
	Students	2005	2008	2012
KSU emphasizes encouraging contact				

among students among different economic, social, and racial or ethnic backgrounds (Question #10).				
	First Yr. Seniors	48% 47%	57% 54%	66% 57%
KSU contributed greatly to their development of understanding people of other racial and ethnic backgrounds (Question #11).				
	First Yr. Seniors	50% 53%	59% 57%	62% 60%
Interest in participating in study abroad before graduating (Question #7).				
	First Yr.	31%	39%	47%

Note. Table summarizes statistically sign. longitudinal increases ($p < .01$ for all longitudinal comparisons) in the percentages of first-year students and seniors endorsing items that reflect a campus supportive of global engagement.

Source: Whittlesey, 2014