

**DECISION SCIENCES INSTITUTE`**

The Global Aptitude Assessment Model: A Critical Perspective

Rochana Kaushik  
Texas A&M University-Commerce  
Email: [Rochana.Kaushik@tamuc.edu](mailto:Rochana.Kaushik@tamuc.edu)

Mahesh Raisinghani  
Texas Woman's University  
Email: [mraisinghani@twu.edu](mailto:mraisinghani@twu.edu)

Shonda Gibson  
Texas A&M University-Commerce  
Email: [Shonda.Gibson@tamuc.edu](mailto:Shonda.Gibson@tamuc.edu)

Natalia Assis  
Texas A&M University-Commerce  
Email: [Natalia.Assis@tamuc.edu](mailto:Natalia.Assis@tamuc.edu)

**ABSTRACT**

Educational institutions have been charged and challenged to prepare and produce globally competent graduates. Past research has shown that students are neither formally educated and trained to comprehend the full impact of global interconnectedness, nor to make informed decisions with full knowledge and awareness of the global implications. The Global Competence Aptitude Assessment instrument asserts the ability to capture an individual's capacities of global knowledge, skills, attitudes, and experiences. Employers would like educators to emphasize several key global learning outcomes in an effort to increase graduates' potential to be successful and contributing members of today's global economy.

**KEYWORDS:** Global competence aptitude assessment, Self-awareness, Open-mindedness, Diversity, attentiveness, Risk taking, Global awareness, Intercultural capabilities, Collaboration across cultures

**INTRODUCTION**

Many of life's decisions are global in nature. The world has been transformed into an environmentally, politically, socially, and economically connected and interdependent web. Events occurring in one locality are affected, and affect, other locales even though we may not immediately see how the connecting strands tug on each other. Chaos scientists refer to this phenomenon as the "butterfly effect" (Lipman-Blumen, 1996, p. 78). However, most students are not formally educated and trained to comprehend the full impact of global dynamics (issues, trends, processes, and systems) and global interconnectedness, nor to make informed decisions with full knowledge and awareness of the global implications (Olson & Kroeger, 2001).

Varied definitions of global competence have been proposed and discussed in the research, each with a different emphasis, but all centered on some variation describing a body of globally relevant knowledge and awareness and the skills and dispositions required to engage responsibly and effectively in a global environment. Following extensive discussion with representatives from multinational businesses, human resource managers of transnational corporations, senior international educators, United Nations and embassy officials, and intercultural specialists, Hunter (2004) formulated an agreed-upon definition of global competence. According to this diverse panel of experts, a working definition of global competence is: "Having an open mind while actively seeking to understand cultural norms and expectations of others, leveraging this gained knowledge to interact, communicate and work effectively outside one's environment" (Hunter, 2004, p.81). As noted by Hunter, White, and Godbey (2006), this empirically-based description is offered as one plausible definition of global competence that can be customized to fit a specific organization or program.

Although research has revealed slightly different approaches for qualifying the components of global competence, there is notable consistency in the content (Lambert, 1996). Specifically, most operational definitions of global competence center on an individual's level of substantive knowledge, perceptual understanding, and intercultural communication skills. Substantive knowledge includes knowledge of cultures, languages, world history and issues, and human choices (Wilson, 1996). These globally dynamic concepts are typically utilized by individuals as they describe, explain, and possibly predict transnational changes. Perceptual understanding is more difficult to assess and categorize since this component includes an individual's perceptions, emotions, and communication skills. The process an individual incorporates to select, organize, and evaluate the world, as well as understanding others in the world, can be categorized as perceptual understanding (Singer, 1998). Components grouped into intercultural communication skills are those that are drawn upon in an effort to engage effectively with others. Specifically, adaptability, empathy, cross-cultural awareness, intercultural relations, and cultural mediation are skills that are included within intercultural communication (Olson & Kroeger, 2001).

The GCAA model illustrated in figure 1 show the eight identified dimensions that collectively represent global competence: self-awareness, open-mindedness, attentiveness to diversity, risk taking, historical perspective, global awareness and collaboration across cultures.

**Figure 1: Global Competence Aptitude Assessment Model**

The GCAA provides two overall scores for internal and external readiness and eight component scores to profile global competence. Internal readiness characteristics encompass the personal traits and attitudinal drivers of global competence - self-awareness, open-mindedness, attentiveness to diversity, risk taking. The External Readiness illustrates the knowledge that individual acquires through experiences in life or through education and personal interactions - historical perspective, global awareness, intercultural capabilities and collaboration across cultures. The maximum score for internal and external readiness is 100 each, for a total score of up to 200 points. Individuals who earn high aptitude ratings for both internal (above 80%) and external readiness (above 70%) are considered globally competent (C. Hunter, personal communication, Fall 2013). The instrument is comprised of four distinct sections, each with a different question style. Cross-referencing is utilized throughout the GCAA, whereby each of the eight identified dimensions of global competence is evaluated from a variety of angles, using different styles of questions and varying degrees of difficulty.

## LITERATURE REVIEW AND SYNTHESIS

### The Global Competence Aptitude Assessment (GCAA) Instrument

Hunter (2004) has defined global competence as “having an open mind while actively seeking to understand cultural norms and expectations of others, and leveraging this gained knowledge to interact, communicate and work effectively in diverse environments.” Our increasingly interconnected and interdependent global society requires that individuals demonstrate the ability to fit and function within a global marketplace. Based on over ten years of rigorous research, the Global Competence Aptitude Assessment (GCAA) instrument asserts the ability to capture an individual’s capacities of global knowledge, skills, attitudes, and experiences (Hunter, 2006). The instrument also reports on an individual’s ability to fit and function within a global environment.

The instrument has been tested in 40 countries on six continents through a series of research studies involving business professionals, government and military, and both students and educators. The GCAA is currently being used in education (students and faculty/staff), business (e.g., L’Oréal), and government and military (e.g., United Nations). Based on past research, reports of instrument use, and the baseline assessments, the GCAA appears to be a reliable and valid instrument capable of measuring constructs related to global competence, including internal and external readiness.

### Global Education and Global Competence

Institutions of higher education have arrived at a critical moment in history, a moment in which global challenges and societal need have intersected. Higher education has encountered a new paradigm in which a dynamic and highly interconnected world has called for more globally competent citizens. Global education answers the call for higher education institutions to remain competitive and provide students with the skills and knowledge required to successfully contribute and participate in their chosen fields. Growing connections and interdependency, coupled with increasingly diverse populations and cultures, make global education a necessity (National Education Association, 2010). Institutions of higher education have been challenged to view the goal of producing globally competent graduates as not only a desired outcome, but an institutional imperative (Hudzik, 2011). Along with high school seniors and their families that report a desire to increase global awareness and competence, employers also believe that higher education needs to address global competence (Hart Research Associates, 2010; Lincoln Fellowships Commission, 2004; NACE, 2011). Additionally, scientific topics such as global climate change, pandemics, environmental sustainability, national resource management, international terrorism, and international business command that globally competent teams work together across the world to find solutions to truly global issues and problems (Curie, 2007).

Overall, global competence has been suggested as the critical attribute every student should possess for effective global marketplace engagement and performance. As the world becomes more interconnected, academic organizations are challenged to produce graduates who are prepared, in both practice and knowledge, to embrace and embody a global world view (Bourn & Shiel, 2009; Hicks, 2003; Pike, 2000). A wide variety of research and case studies have shown that students should develop global knowledge, skills, attitudes, and the ability to engage as a citizen of a highly interconnected world.

## THEORETICAL DEVELOPMENT/MODEL

### Study 1: Baseline Assessment

#### *Methodology*

The web-based Global Competence Aptitude Assessment (GCAA) was utilized to directly assess all three Student Learning Outcomes and the overall objective of a university in northeast Texas Quality Enhancement Plan (QEP), which focus efforts in preparing students for an interconnected world. The GCAA was administered to incoming freshman students in a Freshman Success Class, to exiting senior students upon application for graduation, and as a pre-post assessment with students traveling abroad in all programs. These assessments serve as direct measures of student learning in a wide variety of factors that have been shown to impact global competence. The GCAA provides a baseline measure of global competence for incoming students in a pre-assessment format, while the post-assessment measure will reflect student learning over the student's entire undergraduate experience. The summative post-assessment will allow the university to determine if the overall student learning outcomes and objective of the QEP program have been achieved for both the annual and fifth-year reports.

To gather baseline data, for the implementation of its Quality Enhancement Plan (QEP), the university administered the GCAA to a group of students traveling abroad during the summer of 2013 (pre-test  $n = 28$ , post-test  $n = 26$ ) and a control group who did not travel abroad (pre-test  $n = 35$ , post-test  $n = 11$ ). Additional baseline data was gathered from random incoming freshman students ( $n = 420$ ) in the fall of 2013. The baseline global competence scores revealed areas for improvement, specifically related to the external readiness areas of global awareness (average score 39.9%) and historical perspective (average score 23.1%). The mean average internal readiness scores of 69.8% and external readiness scores of 48.2% indicate overall improvement is needed in an effort to better prepare students for an interconnected world.

The university's QEP seeks to better prepare students for an interconnected world and will strive to improve both internal and external readiness scores to ranges indicative of developing and developed global competence (70 and 80% respectively). Additionally, specific goals have been established for improvement in the critical areas of global knowledge and awareness, where the greatest impact that educators may make is possible. Historical perspective scores in the 50% range, global awareness scores in the 60% range, and overall external readiness scores of 65% demonstrate stretch goals for critically underdeveloped scores revealed in the baseline GCAA results (C. Hunter, personal communication, fall 2013).

The GCAA has been incorporated as one of the class assignments in the Freshman Success Class for all incoming freshman students beginning in the fall of 2014. The assessment will serve as a baseline, offering each student specific areas for improvement along with suggestions on how to improve on these areas; allowing a personalized snapshot of existing competence, with encouragement for continual improvement. Additionally, graduating students will complete the assessment as part of the graduation application process. Utilizing this data from a pre-post group perspective, the university will analyze freshman to graduation gains and will compare results year to year. These analyses will provide both summative and formative measures as evidence of the success of the programs in preparing students for an interconnected world.

## ***Results and Discussion***

The following are additional interesting points to highlight from the baseline GCAA assessment results:

- Significantly higher Internal Readiness post-test scores were measured from the study abroad treatment compared with the control group's post-test scores.
- Significantly higher External Readiness post-test scores were measured from the study abroad treatment compared with the control group's post-test scores.
- Generally speaking, students who self-selected the study abroad experience scored higher in almost every pre-test and post-test measure than the students who did not choose to participate in such an experience. This trend was more strongly observed in the External Readiness category. (It should be noted that only one third ( $\frac{1}{3}$ ) of the control group students participated in the post-test. The GCAA hypothesizes that the more accomplished students were self-motivated and chose to participate again, which raised the group scores substantially in the Historical Perspective dimension.)
- Students who reported travel across continents and/or spent longer durations abroad scored higher in every dimension of global competence than their less-traveled peers.
- Students with greater world language exposure scored higher in all dimensions of global competence (to varying degrees across each) than those with none or more limited language exposure.

All students who completed the GCAA were also asked to review their results report, and then complete a survey about their perspectives regarding the assessment and the results. The students reported their highest and lowest scores, which were recorded in the final GCAA results. Additionally, when asked why they believed their lowest scores were in that particular area, most responded with an answer that reflected a lack of global knowledge, lack of opportunity to encounter global information, or a lack of desire to learn about global dynamics in general. On a positive note, when asked about the potential future use of their individual GCAA results reports, the students indicated ( $n = 364$ ) they would use it for improving personal knowledge (54%) and for personal improvement (46%). The students reported that the GCAA was of average difficulty (56.4%) or difficult to very difficult (28%). The majority of the students agreed with their individual results, with only 14% disagreeing with portions of the report. After reading the individualized reports, most found the results informative (93%). Interestingly, when asked if all college students should be required to complete the GCAA, less than 16% opposed to its use as an accurate assessment of global competence. Overwhelmingly, the students who completed the GCAA and the survey reported positive experiences and viewed the results as a learning opportunity.

## **Study 2: Assessment of Validity and Mean Differences Analysis**

### ***Purpose***

The purpose of the second study was to assess the validity of the GCAA instrument by conducting a correlation analysis, factor analysis, and measure the internal consistency of the data (reliability) using Cronbach's Alpha. Investigation of the significant mean differences in scores (between four colleges and one school) using Analysis of Variance (ANOVA) was also conducted.

## Methodology

Correlation analysis, factor analysis and a reliability test was conducted on GCAA data gathered from first time, full-time freshmen students ( $n = 1819$ ) during the fall terms (2014, 2015).

Analysis of Variance (ANOVA) was conducted on GCAA data gathered from incoming, first-time, full time freshman students from College of Business (COB) ( $n = 78$ , 16%), College of Education and Human Services (CED) ( $n = 153$ , 31%), College of Humanities, College of Social Sciences and Arts (COH) ( $n = 66$ , 13%), College of Science and Engineering (COS) ( $n = 120$ , 24%) and School of Agriculture (SOA) ( $n = 77$ , 16%) in Fall 2015.

## Results

The Cronbach's alpha for the ten constructs of the GCAA was  $\alpha = 0.82$  (see Table 1) indicating the instrument was a highly reliable one. As prior research (Hunter, 2006) and studies have shown, the data collected through the study supported that the GCAA is a reliable and valid instruments of measuring the constructs related to global competence.

**Table 1: Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.847	10

Items 1 through 5 were significantly correlated (see Table 2) to one another, while items 5 through 10 were significantly correlated to one another, which correspond to the two components the instrument claimed to have.

**Table 2: Correlation Analysis**

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
Item 1	1	.653**	.748**	.833**	.818**	.389**	.211**	.235**	.289**	.329**
Item 2		1	.343**	.391**	.386**	.290**	.135**	.192**	.220**	.247**
Item 3			1	.547**	.459**	.232**	.137**	.136**	.175**	.186**
Item 4				1	.565**	.301**	.139**	.165**	.237**	.282**
Item 5					1	.360**	.223**	.226**	.250**	.284**
Item 6						1	.667**	.661**	.701**	.690**
Item 7							1	.283**	.245**	.228**
Item 8								1	.288**	.276**
Item 9									1	.382**
Item 10										1

Item 1: Internal Readiness Item 2: Self Awareness Item 3: Risk Taking Item 4: Open Mindeness Item 5: Attentiveness to Diversity Item 6: External Readiness Item 7: Historical Perspective Item 8: Global Awareness Item 9: Intercultural Capability Item 10: Collaboration Across Culture

Using ANOVA (see Table 3) to compare college/school differences in the ten constructs of measurement, five showed significant differences across the colleges including: self-awareness,  $F(4, 489) = 3.33, p = .010 (p < .05)$ ; attentiveness to diversity  $F(4, 489) = 3.36, p = .010 (p < .05)$ ; external readiness  $F(4, 489) = 6.84, p = .000 (p < .05)$ ; global awareness  $F(4, 489) = 4.86, p = .001 (p < .05)$ ; and intercultural capability  $F(4, 489) = 4.34, p = .002 (p < .05)$ .

**Table 3: ANOVA**

Dependent Variable (Mean Value=M)			Mean Difference	Sig.
<b>Self Awareness</b>	COS (M=70.64)	SOA (M=75.62)	-4.982*	.008
<b>Attentiveness to Diversity</b>	COB (M=66.44)	COH (M=71.67)	-5.231*	.037
	CED (M=66.5)	COH (M=71.67)	-5.013*	.017
<b>External Readiness</b>	COB (M=53.15)	COH (M=58.05)	-4.892*	.045
	CED (M=51.93)	COH (M=58.05)	-6.117*	.001
	CED (M=51.93)	COS (M=57.06)	-5.130*	.001
	CED (M=51.93)	SOA (M=56.66)	-4.734*	.012
<b>Global Awareness</b>	CED (M=41.10)	COH (M=48.27)	-7.168*	.033
	CED (M=41.10)	COS (M=49.00)	-7.895*	.001
	CED (M=41.10)	SOA (M=48.14)	-7.038*	.025
<b>Intercultural Capability</b>	CED (M=63.65)	COH (M=70.44)	-6.792*	.028
	CED (M=63.65)	COS (M=69.53)	-5.878*	.019

### **Results and Discussion**

Study 2 supports the continued use of the GCAA as a reliable and valid instrument. Furthermore, the results assist in the continued implementation and assessment of the influence of the QEP. The results also aid in better understanding students' levels of global competence, specifically between different colleges and schools. This may be particularly important in creation of new programs designed to better prepare students for an interconnected world.

### **CONCLUSION AND FUTURE RESEARCH DIRECTIONS**

Organizations, businesses, groups, and individuals function in a global environment that significantly affects everyday activities. Education is no exception to global influences, often serving as a catalyst for comprehension and adaptation to global trends. Consistently ranked at the top of business, government, and civil society agendas, education is cited as a crucial issue in preparation of individuals to function in an increasingly interconnected world (Schwab, 2007). The forces associated with globalization have influenced the context in which educators operate, have profoundly altered individuals' experiences of education, and have led to a shift in the practice of delivering education. Given the continual restructuring and increasing interconnectedness of the world, the requirements for knowledge and information have changed in terms of structure, function, curriculum, and approach (Cogburn, 1998).

The increasingly interconnected world has brought about continual change, issues, challenges, and opportunities in higher education. In response to the growing need for higher education and

increasing demands for global aspects within higher education, many colleges and universities have expanded their missions and presence on a global scale through recruitment of international students, facilitation of faculty collaboration, creation of cooperative degree programs, and study abroad programs (Johnstone, d'Ambrosio, & Yakoboski, 2010). Additionally, college deans such as the University of Pittsburgh's Dr. John T. Delaney (2013) argue that professors must possess strong global awareness if they are to be equipped to help students apply knowledge within an international context and to develop a global perspective.

Higher education has been charged with increasing the level of international and global scholarship and learning, as well as providing students with an international perspective and understanding, specifically in relation to global processes and self-reflection (Tröhler, 2009). The past decade has called upon higher education to create and develop an increasingly global orientation in both pedagogy and curriculum in an effort to provide students with the skills, knowledge, and dispositions to build awareness and engagement with global issues (Mannion, Biesta, Priestley, & Ross, 2011). Educational policymakers suggest embedding global dimensions across the curricula both within and between subject areas.

Future studies would benefit from utilizing the GCAA in order to assist in the measurement and improvement of global competence in other fields besides education. Most employers who hire college graduates expect students to have both a broad range of skills and specific in-depth knowledge in their field upon completion of a college degree (Hart Research Associates, 2010). The American Association of Colleges and Universities (AAC&U) survey of employers recently reported that less than 25% of employers think that two-year and four-year colleges are doing a good job in preparing students for the challenges of the global economy. Specifically, the majority of the respondents argued that both two- and four-year colleges need to make at least some improvements to better prepare students for the global economy.

Future research could probe deeper into the use of the instrument by addressing pre-conditions such as how the instrument may be biased by students who have studied abroad, travelled abroad, and/or are multi-cultural prior to their freshman year when the pre-test data is collected.

A majority of the employers surveyed believe that colleges should place greater emphasis on a variety of global learning outcomes. For example, well over half of the employers called for improvements in students' ability to understand the global context of situations and decisions, global issues and developments and their implications for the future, increased awareness of cultural diversity of the world, and understanding of the role of the United States in the world. Furthermore, 71% of the employers called for improvements to students' ability to collaborate with others in diverse settings and improvements in teamwork skills. When asked to assess the potential value of emerging educational practices, more than half of the employers expect students to take courses that explore big challenges facing society (e.g., environmental sustainability, public health, human rights), to learn about a point of view of non-Westernized societies, to learn about cultural and ethnic diversity, and to complete a project before graduation that demonstrates their knowledge, skills, and experiences related to global issues. Overall, the AAC&U survey shows that employers believe that colleges should be placing more emphasis on several key global learning outcomes in an effort to increase graduates' potential to be successful and contributing members of today's global economy.

**REFERENCES**

- AAC&U. (2007). College learning for the new global century. Report from the National Leadership Council for Liberal Education and Americans' Promise (LEAP). Washington: AAC&U.
- Bourn, D., & Shiel, C. (2009). Global perspectives: Aligning agendas? *Environmental Education Research, 15*, 661-677.
- Cogburn, D. (1998, October). *Globalization, knowledge, education and training in the information age*. A report prepared for The Congress INFOethics'98, Monaco.
- Curie, M. (2007). *Embracing Globalization: Meeting the Challenges to U.S. Scientists and Engineers*. Washington, DC: Sigma XI: The Scientific Research Society.
- Gibson, S. A., & Reysen, S. (Submission under review, 2013). Representations of global citizenship in a school environment. *International Journal for Development Education and Global Learning*.
- Hart Research Associates. (2010). Raising the bar: Employers' views on college learning in the wake of the economic downturn (AAC&U). Retrieved from [http://www.aacu.org/leap/documents/2009\\_EmployerSurvey.pdf](http://www.aacu.org/leap/documents/2009_EmployerSurvey.pdf).
- Hicks, D. (2003). Thirty years of global education: A reminder of key principles and precedents. *Educational Review, 55*, 265-275. doi: 10.1080/0013191032000118929.
- Hudzik, John K. (2011). *Comprehensive internationalization: From concept to action*. Washington, DC: NAFSA: National Association of International Educators.
- Hunter, B., White, G. P., & Godbey, G. (2006). What does it mean to be globally competent. *Journal of Studies in International Education, 10*, 267-285.
- Hunter, W. D. (2004a). *Knowledge, skills, attitudes, and experiences necessary to become globally competent*. (Doctoral dissertation).
- Hunter, W. D. (2004b). Got global competence? *International Educator, 13*(2) 6-12.
- Johnstone, D. B., d'Ambrosio, M. B., & Yakoboski, P. J. (2010). *Higher education in a global society*. Northampton, MA: Edward Elgar Publishing

- Kaushik, R., Gibson, S., Su, D., & Adkins, T. (2016, April). Assessment of Validity and Mean Differences Analysis of Global Competence Aptitude Assessment (GCAA) Instrument. Presented by R. Kaushik at the Federation Graduate Student Research Symposium, Texas Woman's University, Denton, TX.
- Lipman-Blumen, J. (1996). *The connective edge*. San Francisco: Jossey-Bass.
- Lambert, R. D. Ed. (1996). Parsing the concept of global competence. In *Educational exchange and global competence*. New York: Council on International Educational Exchange.
- Mannion, G., Biesta, G., Priestley, M., & Ross, H. (2011). The global dimension in education and education for global citizenship: Genealogy and critique. *Globalisation, Societies and Education*, 9, 443-456. doi: 10.1080/14767724.2011.605327.
- National Education Association (2010) *Global Competence Is a 21st Century Imperative: An NEA Policy Brief*. Washington, D.C.: National Education Association.
- Olson, C. L., & Kroeger, K. R. (2001). Global competence and intercultural sensitivity. *Journal of Studies in International Education*, 5, 116-137.
- Pike, G. (2000). Global education and national identity: In pursuit of meaning. *Theory and Practice*, 39, 67-73.
- Schwab, K. (2007). Proceedings from World Economic Forum. *Global Education Initiative*. Geneva, Switzerland.
- Singer, M. R. (1998). *Perceptions and identity in intercultural communication*. Yarmouth, ME: Intercultural Press.
- Trohler, D. (2009). Globalizing globalization: The neo-institutional concept of a world culture. *Yearbook Of The National Society For The Study Of Education (Wiley-Blackwell)*, 108, 29-48. doi:10.1111/j.1744-7984.2009.01160.x
- Wilson, A. H. (1996). The attributes and tasks of global competence. In R. D. Lambert (Ed.), *Educational exchange and global competence*. New York: Council on International Educational Exchange.