Global learning: Definition, assessment, and approaches

Jiangyuan Zhou
Stockton University, jy.zhou@stockton.edu

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Corresponding Author

Jiangyuan Zhou, 101 Vera King Farris Dr., Galloway, NJ 08205, USA

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Jiangyuan Zhou

Office of Global Engagement
Stockton University, USA
jy.zhou@stockton.edu

Abstract

Global learning has become a fundamental aspect of international education. Yet, a clear understanding of global learning and how to develop it remain unclear. Using the dynamic systems approach, this paper analyzed the reasons, methods, and knowledge, skills, and attitudes(KSA) of global learning in higher education. Global learning is the higher education institutions' critical response to globalization. It is the essential learning outcome of comprehensive internationalization of curriculum requiring students to develop KSA about the external world and their internal selves in their daily lives across local and global communities. With survey results from 142 undergraduate students in one U.S. university and a global learning rubric and publication, this paper demonstrated how global learning is interpreted and approached differently at various levels and further proposed pedagogical approaches to enhance global learning in higher education.

Keywords: global learning, higher education, global education, teaching and learning

Introduction

Global learning has become a mainstay in the comprehensive internationalization of higher education, and many universities and colleges have begun to discuss it in their institutional priorities and mission statements (Green & Shoenberg, 2006; Helms & Brajkovic, 2017; Meacham & Gaff, 2006). Many higher education institutions have recognized and highlighted global learning outcomes (Olson et al., 2005), and their critical role in developing students to become global citizens—to work and live in an "an interdependent, highly diverse, fast-changing, and volatile world" (Meacham & Gaff, 2006, p. 2). Higher education institutions have also implemented various approaches to enhance students' global learning (Casali, 2018; Helms & Brajkovic, 2017; Scoffham, 2018). Integrating global learning into the disciplinary curriculum is the most common practice on many campuses, including requirements to study global issues or non-western cultures; study abroad opportunities; language, cultural, and regional studies; major or minor in international or global studies; or global certificate programs (Green & Shoenberg, 2006; Helms & Brajkovic, 2017).

Previous research demonstrated challenges defining global learning (Hovland, 2009, 2014; McQuaid et al., 2014). Musil (2006) defined it as a desirable outcome of general education, and it is "rich, discipline-appropriate, varied, and rigorously, creatively developmental" (p. 1). Global learning has been described as goals (Hovland, 2014; Musil, 2006); skills (Fatherly & Blair, 2014);

values (Hovland, 2014); learning (Teichler, 2004; Zeszotarski, 2001); outcomes (Olson et al., 2005); a learning process (Kahn & Agnew, 2017); kinds of learning (Olson et al., 2006); and an educational reform product (Hovland, 2014). Moreover, global learning is frequently used interchangeably with other terms, including global curriculum, global awareness, global perspectives, or global citizens, among others (Braskamp, 2010; Khazem, 2018; Scoffham, 2018).

Hovland (2014) argued that global learning is "a term widely used across higher education, yet higher education faculty, staff, and practitioners do not always agree about what it means" (p. 2). However, to date, little research has been done on critical questions as to what global learning is and what it includes. This ambiguity and variance in defining global learning further make assessment difficult, if not impossible. Helms and Brajkovic (2017) reported that only 29% of institutions—the lowest-ever proportion of institutions—engaged in formal assessment efforts on internationalization, including global learning. Therefore, a clear definition and description of global learning is urgently needed to effectively promote internationalization of higher education.

Previous research also notes the missing critical voice from students in defining and promoting global learning. Jones (2010) emphasized that students are aware of the relevance between global dimensions and future employability and personal growth. Killick (2015) proposed the development of students' global self through internationalization activities. Chaudhury et al. (2019) reported that undergraduates tended to acknowledge cultural diversity courses in the existing curriculum. Musil (2006) found a concerned disconnect between structured learning opportunities provided for students and global learning declared in institutions' mission statements. A clearer understanding on how students perceive and interpret global learning will provide important and necessary information on enhancing global learning in higher education teaching and learning.

This paper explores three questions: (a) What is global learning; (b) How is global learning defined and perceived at various levels; and (c)How is global learning developed effectively in higher education?

Defining Global Learning

Impacts of Globalization on Higher Education

Globalization is a process of interactions and integration among various parts of the world (Ruzana, 2015). It has been widely addressed across disciplines, including management and business, geography, sociology, anthropology, environmental sciences, computer sciences, technology and information, and language and cultural studies (Perry & Maurer, 2003). Globalization has enormous influence on the society, such as worldwide production and distribution; establishment of global corporations; flow of money, goods, and people; inter- and cross-cultural communications; international trade; cultural exchange; and so on (Ruzana, 2015). Globalization is "the increasing worldwide integration of economic, cultural, political, religious, and social systems" (Black et al., 2009, p. 165).

Globalization is not a new term (Pieterse, 2012), and has been discussed extensively in the field of economics and business for over a century (Nayyar, 2006). The rapid advancement of technology and transportation in recent decades has brought globalization even further to the front

(Ruzana, 2015). Researchers in different fields have analyzed the impacts of globalization on societies, including the intensification and acceleration of social relations, the worldwide sharing of local events and local interpretations of world events (Giddens, 2003), transformation in "extensity, intensity, velocity, and impact of the exercise of power" (Held et al., 1999, p. 16), and the creation and multiplication of "social networks and connections across traditional political, economic, cultural and geographical boundaries" (Ghosh, 2007, p. 131). Other than impacts on the objective materials, globalization has also advanced the expansion, compression, and intensification of people's consciousness of the world and the individual personhood across time and space (Robertson, 1992; Steger, 2008). Globalization has changed every aspect of society, including how people perceive, perform, and produce things.

Internationalization: Higher Education Institutions' Response to Globalization

As a foundational aspect of society, education has always been responsive to societal changes such as the creation of public educational system to meet the needs of industrialism (Robinson, 2006). Education has undergone dramatic changes under the impact of globalization, especially for higher education. One of the most direct results is the student mobility, including international students (i.e., inbound students) and study abroad students (i.e., outbound students) (Haisley et al., 2021). In the 2017-2018 academic year, the United States had 1,094,792 international students studying in its colleges and universities, and these international students contributed $39 billion and supported 455,622 jobs to the U.S. economy (Institute of International Education [IIE], 2019; Association of International Educators [NAFSA], 2019). The report also showed 85% more international students studying in the United States than 10 years prior (IIE, 2019). In the 2017-2018 academic year, 341,751 U.S. students studied abroad, a 46% increase in the past 10 years (IIE, 2019). In past decades, more colleges and universities have set up branch campuses in overseas countries to further reap the benefits of globalization (Garrett, 2018). International ranking of these institutions is another increasing impact of globalization on higher education institutions (NAFSA, 2015).

All these changes are important components of comprehensive internationalization of higher education. Therefore, internationalization of higher education is the higher education institution's response to the globalized world (Stromquist, 2007). Realizing impacts of globalization, more universities and colleges have specifically indicated their strong emphasis and interest of internationalization (Musil, 2006). Since 2011, 72% of higher education institutions reported an accelerated internationalization, and 30% reported that internationalization had become high or very high in their mission statements (Helms & Brajkovic, 2017).

Global Learning: Outcome of Internationalization of Higher Education

Curriculum is the core of higher education; therefore, globalization has naturally found its way into the curriculum as well. Globalization has changed what and how we teach. Different from numbers and dollars, the impact of globalization on curriculum and learning outcomes is less visible yet critical to higher education institutions. In response to globalization's impact on curriculum, educators have developed a proactive stance, providing opportunities for students to learn how to approach, interpret, and engage with the world. This is global learning. Therefore, the personal and professional benefits of global learning become a part of the student (international and domestic) higher education experience.

Global learning should be the central goal of internationalization. Institutions continue to realize this and are refocusing their internationalization strategies and activities to create a more globally oriented curriculum and pedagogy to prepare students as global citizens (Shulsky et al., 2017). Helms and Brajkovic (2017) reported that curriculum, co-curriculum, and learning outcomes have together been recognized as one of the "two center pillars" (p. 38) of comprehensive internationalization in U.S. colleges and universities. Nearly 64% of institutions have listed international or global learning outcomes, and 15% have offered faculty workshops on assessing global learning. Musil (2006) found that many institutions have specifically listed in their mission statements that students are expected to "thrive in a future characterized by global interdependence" (p. 1).

Myths About Global Learning

There are some widely adopted myths in developing global learning in curriculum internationalization.

Myth 1: Global learning is about going abroad. There is a deep-seated belief that global learning equates to study abroad, or at least travelling outside of the campus and local community (Fischer, 2015). In fact, global learning is the outcome of curricular changes under the influences of globalization, and students will encounter various kinds of globalization in their daily life on campus as well as in local communities (Sobania & Braskamp, 2009). Although studying abroad is an effective way to develop global learning (Hovland, 2006), it is not the only approach to achieve global learning (Liao et al., 2019). The local context is a part of the global context, and global learning can and should be developed within the daily life of local communities.

Myth 2: Global learning is only for certain disciplines. Many students tend to think that global learning is only for certain disciplines that have a clear and direct connection to globalization, such as business, anthropology, or cultural and regional studies (Standish, 2012). Global learning is the essential student learning outcome that all students across the disciplines need to develop to meet the needs of globalized society. Therefore, global learning is for everyone.

Myth 3: Global learning is about the external world. Global learning has also been interpreted as exploring the external world, including understanding various cultures, developing perspective-taking skills, or practicing intercultural communications (Hovland, 2014). With more experience with various cultural practices and perspectives, students should also develop a more accurate self-awareness of this process (Association of American Colleges and Universities, 2009). They learn to understand who they are and what they can contribute to the world. Global learning is not just about the external world, but the internal self of each student as well.

In summary, global learning is a critical response of higher education institutions to globalization. It is the outcome of internationalization of higher education that students should acquire in their academic experience at colleges and universities (Hovland, 2014; Olson et al., 2006; Ruscio et al., 2015). Global learning is the essential learning outcome that requires students in all disciplines to develop knowledge, skills, and attitudes (KSA) about the external world as well as their internal selves in daily lives across local and global communities.

With a clearer definition of global learning, the following section explores what global learning includes and how to develop it in higher education.

Literature Review: Theoretical Frameworks

Dynamic Systems Theory of Internationalization of Higher Education

Zhou (2016, 2017) proposed a dynamic system of five levels for the internationalization of higher education: global, national, institutional, program, and persona (see Figure 1). These five levels focus on examining internationalization of higher education in various contexts. The global level, the broadest level, examines internationalization happening in the global context; the national level focuses on the unique situation and needs of internationalization in specific countries; the institutional level examines internationalization happening in individual institutions; the program level focuses on internationalization in certain disciplines or programs; and the personal level examines internationalization for individual persons or in specific courses (Zhou, 2016, 2017).

Figure 1. A Dynamic Model of Internationalization of Higher Education
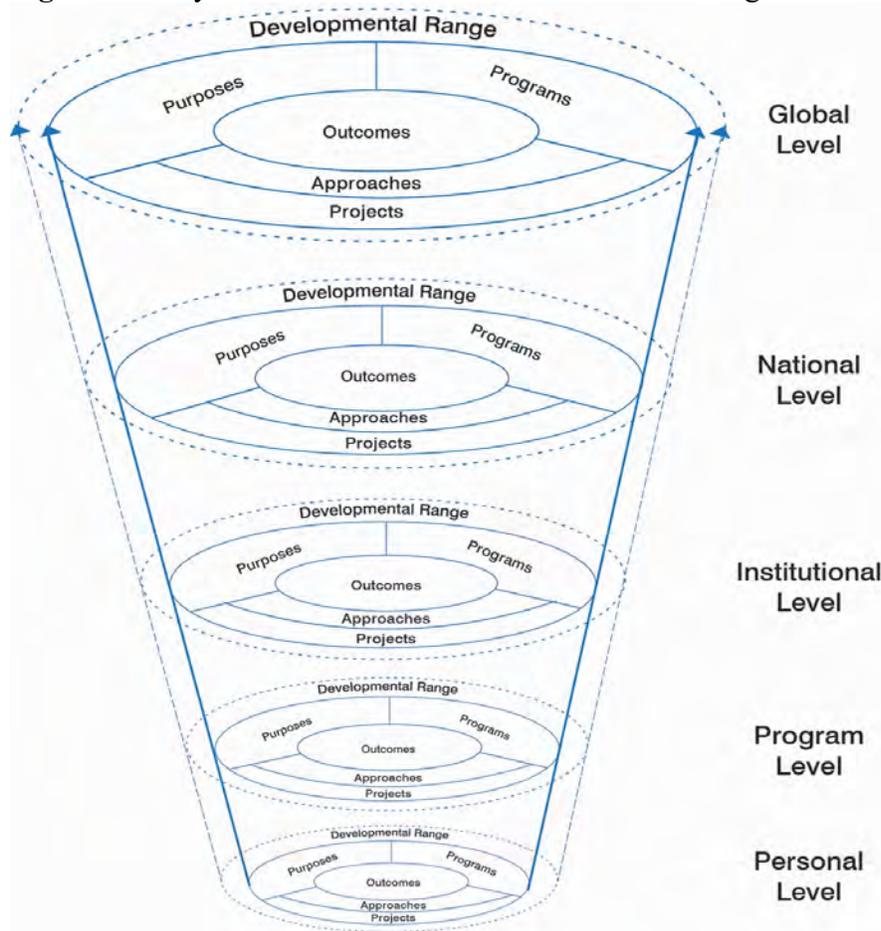
Source. Zhou (2017)

This open, continually changing, and multileveled internationalization has numerous systems at each level and each system includes various factors, such as history, components, parameters, contexts, and variables. The dynamic variables of each system include

Purposes (i.e., Why does the subject need internationalization?), *Outcomes* (i.e., What can the subject get from internationalization?), *Programs* (i.e., Where does the subject need internationalization?), *Approaches* (i.e., How does the subject achieve internationalization?), and *Projects* (i.e., What does the subject do in achieving internationalization?) (Zhou, 2017, p. 5).

Global learning is the outcome of internationalization of higher education, and this paper will further examine how global learning is perceived, defined, and approached at various levels.

Theory of Learning Outcomes

To assess the effectiveness of student learning, research showed that learning outcomes are often analyzed as three separate categories: cognitive, skill-based, and affective—which are commonly identified as KSA (Bloom, 1956; Gagne, 1984).

Kraiger et al. (1993) proposed detailed definitions and descriptions of these three categories. When faculty evaluate students' cognitive outcomes (knowledge), they need to assess three subcategories. According to Anderson (1982), the first subcategory is verbal knowledge, including declarative knowledge (the facts, concepts, and definitions on what students have known and can report on); procedural knowledge (the knowledge of how to use declarative knowledge); and strategic knowledge (the information about the task, context, and process). The second subcategory of knowledge is students' knowledge organization. This refers to how students build meaningful structures to organize their knowledge; that is, how they connect various concepts, how they integrate new information, and how they organize concepts in certain ways (Messick, 1984). Experts usually show a more complex and organized structure; that is, students store knowledge more hierarchically, and they tend to integrate new knowledge into the existing structure faster and easier to locate later (Goldsmith & Johnson, 1990). The last subcategory of knowledge is students' cognitive strategies, or the internalized knowledge and the knowledge of one's own cognition, self-regulation, and context (Prawat, 1989) This includes the contextual knowledge that students use to plan, monitor, and revise their behaviors and to understand relationships (Brown et al., 1983; Schoenfeld, 1985).

The skill-based outcomes (skills) refer to the ability to apply knowledge to perform tasks, use practices and working memory to make fewer errors, improve accuracy, choose more appropriate situations for the skills, and become more task-focused and task-specific (Gagne, 1984; Weiss, 1990). Skills have two subcategories: motor skills and cognitive skills, including metacognitive strategies to advance performance (Fitts & Posner, 1967).

The affective outcomes (attitudes) refer to student attitudes, motivation, values, and goals (Ajzen, 1991; Gagne, 1984). Research shows that this internal state strongly impacts student knowledge and skill acquisition and performance (Geber, 1990). Motivation implies the student tendency to make various levels of cognitive effort, competence, and commitment in the given tasks (Dweck & Leggett, 1988). Based on motivation and self-efficacy, students further differentiate and set

various goal and objective structures when approaching tasks and making decisions (Gist, 1989; Kraiger et al., 1993).

The identification and description of the KSA at various levels of global learning provide a better understanding of global leaning, the essential learning outcome of globalization.

Methods

Based on the dynamic systems theory of internationalization of higher education (Zhou, 2016, 2017) and the theory of learning outcomes (Kraiger et al., 1993), this study used a self-report survey to understand how global learning, the outcome of internationalization, is interpreted, specifically as KSA and further approached at various levels of internationalization.

Participants

One hundred and forty-two undergraduate students from one mid-size public U.S. institution of higher education voluntarily participated in the study in spring of 2018. Seventy-seven students were recruited randomly from a variety of global-focused co-curricular activities on campus, including, for example, the Globalization Lecture Series, World Language Tables, and student organizations with a focus on specific geographic areas. Participation in the activities indicated a personal interest in global learning. Sixty-five students were recruited randomly from courses in the Global Studies minor program Courses included Understanding Global Learning, South Africa Now (with a faculty-led study abroad component), and the Global Studies Capstone course. Students enrolled in these courses had a strong tendency to pursue the minor in Global Studies. Table 1 shows the demographic information of the participants in the study.

Table 1. Grades and Majors of Participants

Demographics	Percentage	
	Personal Level ($N = 77$)	Program Level (N = 65)
Grade		
Freshman	10.40	3.08
Sophomore	12.98	26.15
Junior	40.26	40.00
Senior	36.36	30.77
Majors		
Biology	5.19	13.85
Business	10.39	20.00
Computer Sciences	18.18	9.23
Criminal Justice	10.39	4.62
Education	5.19	7.69
Environmental Sciences	5.19	12.31
Health Sciences	15.58	15.38
Language and Art	14.29	7.69
Political Sciences	5.19	4.62
Psychology	10.39	4.62

Measures

A two-item questionnaire was constructed for the study to examine students' perspectives on global learning. The first question (*What is global learning?)* aimed to understand student

perceptions and interpretations of global learning. The second question (*How can students or the institution promote global learning at the current institution?*) examines student comprehension of global learning by examining their strategies and approaches to develop global learning (Morrison et al., 2004).

Before answering the questionnaire, participants were informed that the global perspective is one of the institutional strategic themes and global awareness is one of essential learning outcomes identified by the institution. None of the students asked for clarification while answering the questionnaire. Students were presented with a paper version as well as a link to an electronic version of the questionnaire, and they chose which version they would like to use. Students' handwritten answers were later typed, and all student responses were entered into one database.

To better understand student perspectives of global learning, publications from several U.S. national associations and organizations, such as American Association of Colleges and Universities, American Council on Education, NAFSA, National Survey of Student Engagement, and National Institute for Learning Outcomes Assessment were analyzed to present how global learning is defined and framed at the national level in the United States (Andreotti, 2011; Fatherly & Blair, 2014; Helms & Brajkovic, 2017; Hovland, 2006, 2014; Kinzie et al., 2017; Musil, 2006; Olson et al., 2006).

The research goal was twofold: (a) How is global learning perceived and interpreted, and (b) how is global learning approached at various levels? Therefore, two sets of codes were used to analyze the data. For the first research question, definitions and categories of KSA (Kraiger et al., 1993) were used as the codes. For the second research question, American Council on Education's model for comprehensive internationalization was used for the codes (Helms & Brajkovic, 2017) in six areas: articulated institutional commitment; administrative leadership, structure, and staffing; curriculum, co-curriculum, and learning outcomes; faculty policies and practices; student mobility; and collaboration and partnerships.

Results

Knowledge, Skills, and Attitudes (KSA) of Global Learning at Personal, Program, and National Levels

Data from two groups of students and national definitions of global learning were analyzed to understand perceptions and interpretations of global learning at the personal, program, and national levels (Zhou, 2016, 2017).

To better present the KSAs that emerged from the written texts, the original KSA categories (Kraiger et al., 1993) were selected and slightly revised. The category of *knowledge* has two subcategories: verbal knowledge (i.e., the facts, concepts, and definitions of the world) and contextual knowledge (i.e., the information about the where and how global learning happens); the category of *skills* has two subcategories: activities and performances (i.e., the actual performances in developing global learning) and cognitive strategies (i.e., the metacognitive actions of how to develop global learning); and the category of *attitudes* has two subcategories: attitudes (i.e., the perspectives and standpoints of global learning) and motivations and goals (i.e., the incentives and objectives of pursuing global learning).

Figure 2 presents the KSA of global learning at the personal, program, and national levels. For the category of *knowledge*, students at the personal level focused on local and national cultures and practices, and the differences and similarities between cultures and problems caused by these differences. They saw global learning happening in local and international contexts, and they compared the United States with other countries. Students at the program level talked about global systems (i.e., moral, educational, and environmental), global issues and gaps, social norms, stereotypes, diversity, and responsibility. They defined global learning as ever-changing in real-life contexts and in the global society. They also connected global learning with globalization. Experts at the national level focused on more global systems (i.e., political, social, natural, economic, etc.), as well as global principles, challenges, privileges, and social hierarchies. They emphasized cumulative and systematic developments as well as the in-equitability, complexity, and sustainability of these global systems. Experts also mentioned the history of global learning in historical and contemporary time. They saw these global systems as independent and interrelated.

For the category of *skills*, students at the personal level saw global learning as interacting with others; organizing, participating in, and engaging with global learning activities; and learning foreign languages. To develop global learning, students should understand the importance of global learning, elaborate global learning goals, and be aware of the existence of diverse cultures. Students at the program level saw global learning as accepting the essential role of global learning, and introducing, explaining, and promoting global learning. Students should search opportunities for global learning and reflect and analyze their experiences as well as integrate global learning into their daily lives. They should be able to break stereotypes and construct conscious opinions. To develop global learning, students at the program level should understand the importance and benefits of global learning and develop motivations and responsibilities to promote global learning. They also realized that they did not have enough knowledge of global learning and should purposefully look for culturally diverse content and challenge themselves. Experts at the national level emphasized that students should be able to identify, recognize, articulate, and interpret global learning. They should explore, connect with, and appreciate the world, evaluate situations, and shift their identities in various contexts to establish partnerships across cultures. Students should ask, address, and debate critical questions to challenge and self-teach themselves. They should have the ability to rationale and further translate theories into real-life practices. To develop skills, students should keep in mind that the world is constantly changing, and believe their interventions are possible and will lead to positive consequences. By realizing that their own established perspectives and nations are parts of the world, students should be able to consciously use multiple perspectives and strategize their techniques.

For the category of *attitudes*, students at the personal level were curious, empathetic, and open-minded. They were willing to engage and saw the world as interconnected. With global learning, students aimed to work and talk together, help each other, make new friends, and improve their life quality. Students at the program level were accepting, brave, friendly, and compassionate. Using the cosmopolitanism as a guide, students saw global learning as a lifelong learning with universality, togetherness, and inclusiveness. Their goals for global learning were breaking prejudice, stereotypes, and discrimination and further bringing good outcomes at personal, local, and global levels. Students aimed to develop confidence and skills for their future jobs, become responsible and active citizens, and build a unified community. Experts at the national level expected students to have a strong commitment to the community as well as to develop responsibility, morality, ethics, and tolerance in the world. Students should respect diversity and

have global self-awareness as well as an integrated and mature identity. The motivations and goals were solutions to pressing or enduring issues, understanding of common goals and interrelationships, engagements with global systems and legacies, sustainable developments of global systems, and advancements for equity and justice.

Figure 2. Knowledge, Skills, and Attitudes (KSA) of Global Learning at Personal, Program, and National Levels
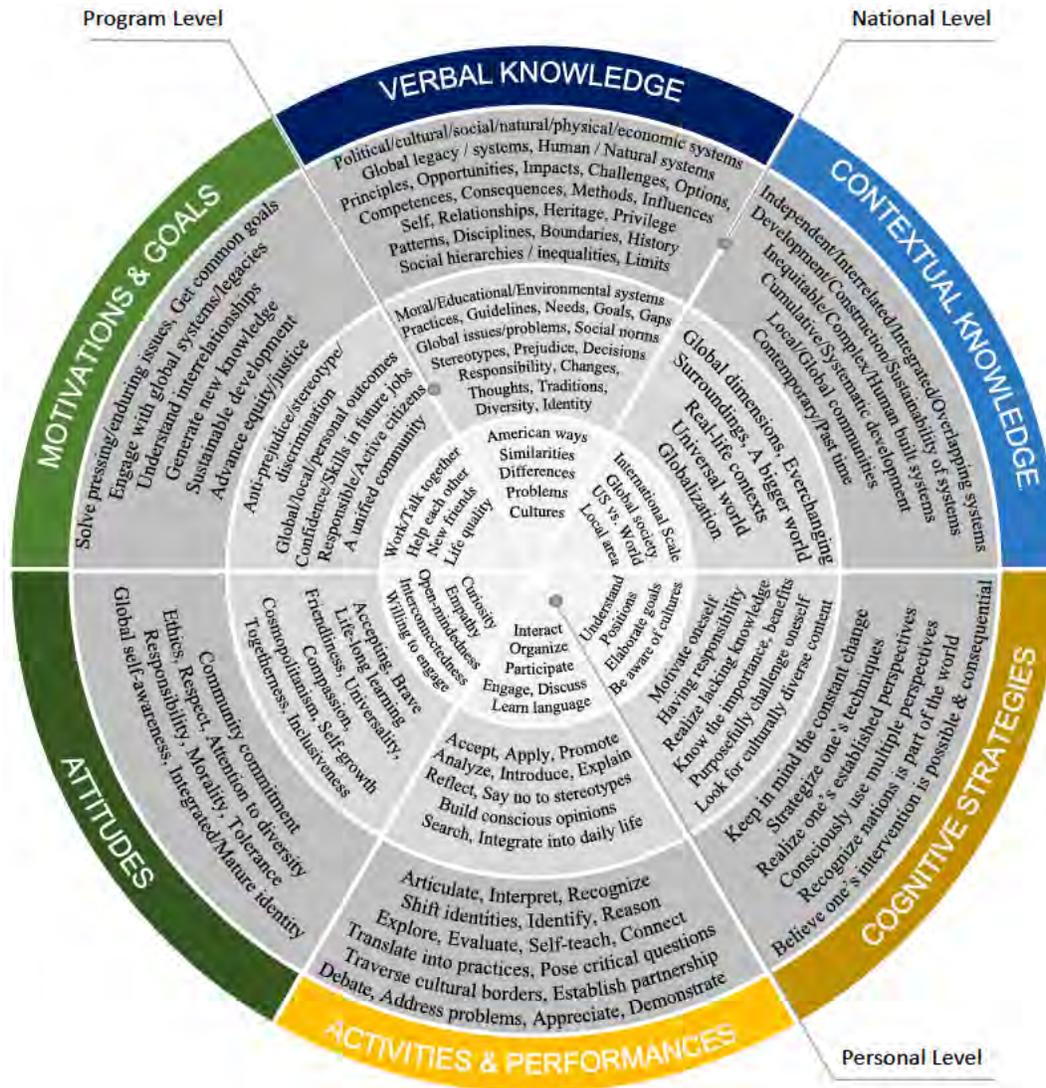

Approaches to Enhance Global Learning at Personal and Program Levels

Based on six areas and subareas of the model of comprehensive internationalization (Helms & Brajkovic, 2017), Figure 3 demonstrates students' proposed approaches to enhance global learning at personal and program levels.

At the personal level (the inner solid curved line in Figure 3), students proposed six categories: promotion, local community, international programs, study abroad, curriculum, and co-curriculum. Students proposed increasing student buy-in of global learning via social media,

tabling, and free giveaways. Students talked about interviewing local community members to connect with local communities. As for the international programs, students emphasized the role of the English Language Center, and proposed programs like internships in other countries and international-domestic student buddy program. Students mentioned study abroad programs to promote global learning on campus. Curriculum was the biggest category of students' proposals at the personal level, proposing three subcategories: languages, programs, and courses. For languages, students proposed having summer programs and a campus-wide language requirement. For programs, students proposed developing a major in international business and creating more courses in academic programs. They mentioned several specific programs to promote global learning in the curriculum, including the Freshman Seminar, STEM in the global context, service-learning and field experience components, and online courses with global content. For courses, students mentioned three aspects: requirements (i.e., making global learning courses mandatory and adding global learning course attributes), content (i.e., adding non-western and global studies contents, disciplinary practices in other countries, introducing United Nations Sustainable Development Goals, and emphasizing diversity, and instructions (i.e., inviting guest speakers, asking faculty to share their global experience in class, and using technology in teaching). For co-curriculum, students proposed a variety of activities, including cultural events, movie night, student organizations and clubs, world cuisine, extra credit, language tables, trips, and games.

Figure 3. Approaches to Global Learning at Personal and Program Levels
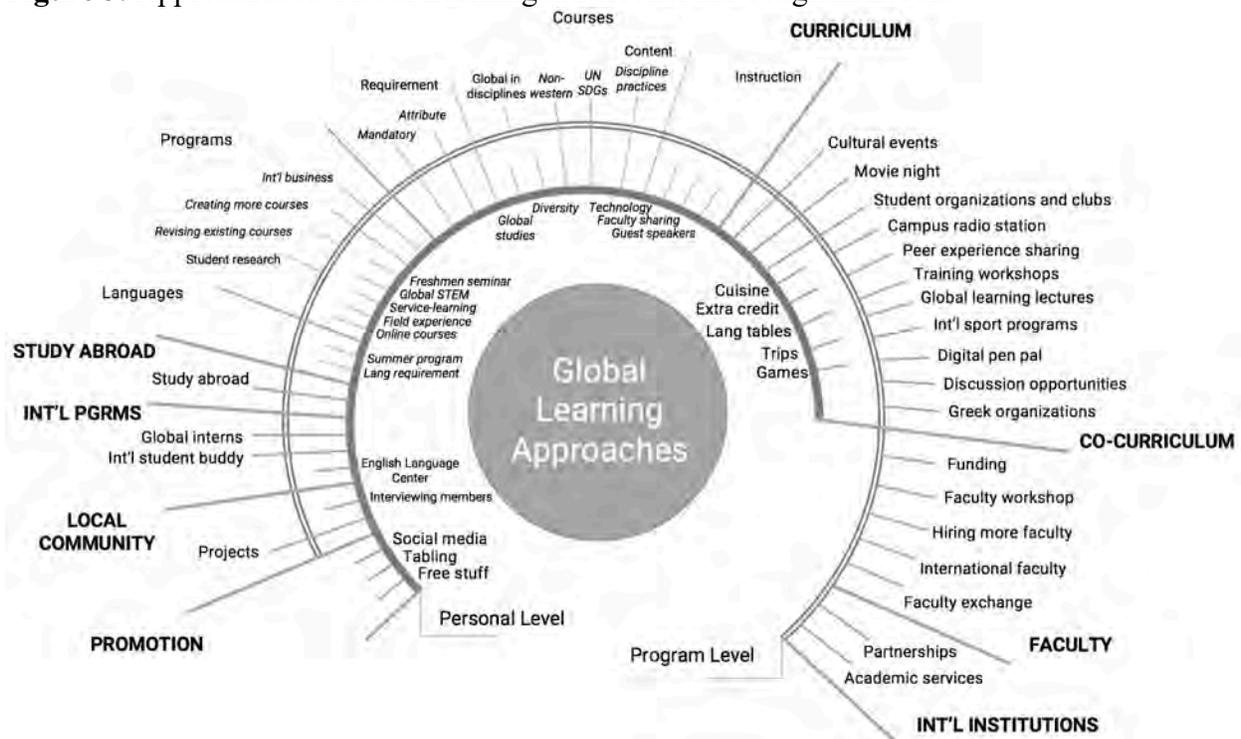
The program level (the outer curved double lines in Figure 3 has seven categories, including five categories shared with the personal level (local community, international programs, study abroad, curriculum, and co-curriculum). Students did not mention the category of promotion but proposed two new categories: faculty and international institutions. For local community, students proposed developing projects that would connect with and benefit local communities. For international

programs, students shared the global internship and international-domestic student buddy program with the personal level, but they did not mention the English Language Center. As for the curriculum, students mentioned two subcategories: programs and courses, and did not mention languages. For programs, students shared the international business major and creating more courses with the personal level, but they further proposed revising existing courses in the academic programs and promoting student research in global learning. For courses, students did not mention instruction, but shared the other two aspects. For requirement, students shared the same two approaches with students at the personal level, making courses mandatory and adding course attributes; and for content, students shared three approaches: adding non-western contents, introducing disciplinary practices in other countries and United Nations Sustainable Development Goals. They did not mention emphasizing diversity and adding global studies content, but they added introducing global perspectives in specific disciplines. For co-curriculum, students shared three approaches with the students at the personal level (i.e., cultural events, movie nights, and student organizations and clubs), but they proposed many more programs, including a campus radio station, peer experience sharing, student training workshops, global learning lectures, integrating international sports, digital pen pals, discussion opportunities for the whole campus, and Greek organizations. Students at the program level proposed a new category on faculty policies and practices. Students proposed to have faculty exchange program with other institutions, emphasize the role of international faculty on campus, hire more faculty, host workshops for faculty to get involved in global learning activities, and increase funding on faculty research around the world. Another new category proposed by students at the program level was international institutions. They proposed establishing more collaboration and involving more academic programs in these global learning partnerships.

Discussion

Using the dynamic systems approach, this study examined definitions and approaches of global learning. The results are significant in two ways: (a) global learning is defined and perceived differently at the personal, program, and national levels, and the KSA of global learning becomes broader and more comprehensive at the upper levels; and (b) global learning is approached differently at the personal and program levels, with more dynamic variables being considered and involved at upper levels (Zhou, 2016, 2017).

Definitions and Levels of Global Learning

Results show that global learning, the outcome of internationalization of higher education, is multi-levelled, and these levels are both independent and interconnected.

Green and Shoenberg (2006) proposed that developing global learning is "to ensure that all students learn about other nations, languages, cultures, and histories, and global issues" (p. 1). Students at the personal level tended to focus on differences and similarities across cultures, which can lead to a better understanding on cultural and social diversity. Differences and similarities serve as the basic foundational knowledge to develop global learning, as Kahn and Agnew (2017) argued that "the feature of difference may ironically be one of the few 'non-negotiable universals'. . .of global learning" (p. 53). However, differences and similarities will not lead to complete global learning. Global learning is an integration of KSA, and students should be taught with a broad and comprehensive set of KSA of global learning. Students need to go beyond differences and

similarities and see the interconnectedness of cultures as well as the whole world as one system. Students at lower levels failed to realize the existence of various levels of global learning and the connections between these levels. They tended to see global learning happening only at the broader global level and did not realize that it also happens at the lower levels. Consequently, students at the lower levels could not position themselves within the system of global learning: Without seeing the relationship between the local communities and the globalized world, students do not see themselves as part of the whole system. Therefore, students should realize that global learning could and should happen at their home institution, in their local communities, and in their daily lives.

Global learning expands from the physical world at the lower levels to the people and their self-awareness at the upper levels, which aligns with Myth 3 discussed above—that global learning is about internal selves as well as the external world. Students should understand themselves and develop self-awareness and self-growth skills. Students need to realize that they are part of the world (i.e., they are connected to the globalized world in their daily lives and in local communities), and the world is part of them (i.e., they can and should make changes to the world). Therefore, students can make the world a more diverse, inclusive, and sustainable place, and more importantly, they can change the global system from within.

This study showed that global learning is defined much more broadly and contains more information at the upper levels, with big gaps of interpretations and understandings of global learning across levels. These results can inform international educators about the current mindset of students in understanding global learning and, more importantly, the gaps of students' global learning KSA between these levels. Educators should develop effective and targeted approaches to support students expand their understanding of levels and definitions of global learning, to make connections across levels, to build a true *global* community, and to develop practical and comprehensive global learning.

Pedagogical Approaches of Global Learning

Various approaches were suggested to promote global learning at personal and program levels. Students at the program level showed a broader understanding of global learning KSA, connected it with more dynamic variables of internationalization, and situated global learning in multiple and bigger systems. Therefore, students proposed broader and more diverse approaches. This result aligns with previous research on the dynamic nature of internationalization. As the outcome of internationalization, global learning in individual systems and at each level is open, self-organizing, and continually changing based on its sensitive connections to other dynamic variables such as purpose, programs, approaches, and projects (Zhou, 2016, 2017).

To develop global learning, educators need to analyze their campuses first to identify the dynamic variables on the campus: Why does the campus want to develop global learning? What needs to be done to achieve global learning goals? What are the available resources? Where are the students current KSA of global learning? And what do these students want to achieve? Educators may also reconsider adapting pedagogical practices with other variables, such as the environment, the curriculum (including hidden curriculum), the delivery, and the institution (Killick, 2015). Based on these analyses, each system can "make a functional match between what the environment affords and what the actor can and wants to do" (Thelen & Smith, 1994, p. 44).

These results on personal and program levels will shed light on developing appropriate and effective approaches to global learning for other levels of internationalization. For example, at the institutional level, this mid-size public U.S. university needs to map existing variables on campus, assess current development of global learning, and then design a comprehensive approach (Zhou, 2017). Therefore, this university proposes the following four pedagogical approaches to develop global learning in the curriculum: (a) cultures and languages across the curriculum, (b) collaborative online global learning, (c) community engagement and service-learning, and (d) collaborative teaching and knowledge transformation. These four pedagogical approaches at the institutional level highlight the interdisciplinary, creative, and innovative nature of global learning; emphasize close connections between faculty, students, and community; underline essential and extensive roles of world languages and technology to advance dialogues across disciplines, boundaries, and borders; and provide specific ideas and methods of internationalizing the curriculum from revising one section, an assignment, or an activity of a course to (re)designing a complete course while integrating global learning into course content, instruction strategies, learning outcomes, and assessment.

Since each level of internationalization is composed of many systems, and these systems operate with the same dynamic principles (Zhou, 2016, 2017), these approaches used by one system, no matter which levels of internationalization, can be applied to other systems at the same and other levels, depending on the unique connections between existing dynamic variables specific to the system.

International educators should understand that these dynamic variables will continually interact with each other within or beyond the systems, and by doing so, changes in one variable will have an impact on global learning and the whole internationalization of the system through the dynamic self-organizing process. Therefore, "multiple causes might lead to different effects in various contexts, and 'no single component—internal and external—has the causal priority'" (Thelen & Smith, 2006, p. 281). Compound impacts of various resources and contexts must be considered when choosing multiple, appropriate, and effective approaches to developing global learning on individual campuses.

Limitations and Future Research

Although participants in this study were recruited randomly, they already showed initial interests in global learning. With a small percentage of U.S. college students participating in mobility and global learning programs (IIE, 2018; Musil, 2006), this participant sample could lead to a biased and more optimistic presentation of global learning at personal and program levels. Results from students who have limited global learning experience or with neutral or little interest in global learning might provide a different, potentially lower, understanding of global learning at personal and program levels.

This paper examined students' written responses. Further research with various approaches to examine students' KSA would be helpful; for example, the stages of student skills could be better understood by using the concept map (Novak & Gowin, 1984) to analyze the knowledge organization of students' global learning; observing students' actual practices in global learning initiatives such as in education abroad programs or cross-cultural communications (Anderson,

1982; Kraiger et al., 1993). Another possibility is to compare student performances to identify and examine the role of motivation and goal achievement in developing global learning.

More studies examining the connections between global learning and other dynamic variables would also contribute to a better understanding of global learning. For example, how is global learning developed between systems at one level or across levels? How does global learning as an outcome relate to other dynamic variables? Would the explicit expression in mission statements influence the development of global learning? Which agents are currently (or should be) involved in developing global learning?

Dynamic systems framework presents a broader and systematic approach to examining internationalization of higher education across various levels. More studies on other global issues, including mobility, sustainable development, geopolitics, or global talents would provide a more complete picture of the complexity and immediacy of integrating global learning into the curriculum. These future studies would enhance awareness and understanding of global learning and provide more practical information for students and educators to learn and teach global learning effectively and purposefully.

The interchangeable terms in the field have caused confusion for researchers and practitioners. Compared to terms emerging from various disciplines on learning outcomes, such as *global perspectives* on cross-cultural awareness, ethical practices, and global values (Killick, 2007) or *global competence* on the capacity and actions on solving global issues (Boix Mansilla & Jackson, 2011), this article proposed that global learning is a broader and more inclusive term that highlights the constructive learning process and various learning outcomes of internationalization. As the learning outcome of internationalization, global learning further differentiates itself from several other terms such as *global citizenship,* which focuses pedagogy on the critical knowledge construction process of achieving learning outcomes to empower students (Blackmore, 2016; Saperstein, 2020) and *global education,* which refers to the educational process or programs with global learning as the learning outcomes. All these terms are interconnected and centered around global learning; therefore, more research on global learning would contribute greatly to the development of theory and pedagogical practices, components, and processes of internationalization.

Conclusions

Higher education is undergoing rapid changes in this globalized world, and whether individuals or institutions are aware of these changes, higher education is responding to globalization with the internationalization of higher education. As an outcome of internationalization, global learning is the inevitable and essential learning outcome of every college student. Students need to develop global learning to survive and thrive in this globalized world. In a broader sense, global learning is about learning what and how to learn in the global context. It is critical for every educator and student to raise the awareness of globalization's impact on higher education, to have a clear understanding and a shared language of global learning, and to develop dynamic and diverse approaches customized for their individual systems.

Global learning is the consequence of changes of other variables of internationalization and can simultaneously be the force to change other variables. Through global learning, educators are

enhancing students, faculty, and institutions' effective responses to the globalized world, preparing each student with real-life experience and essential skills, and developing global self-awareness and responsibilities to create a diverse and inclusive community both locally and globally.

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