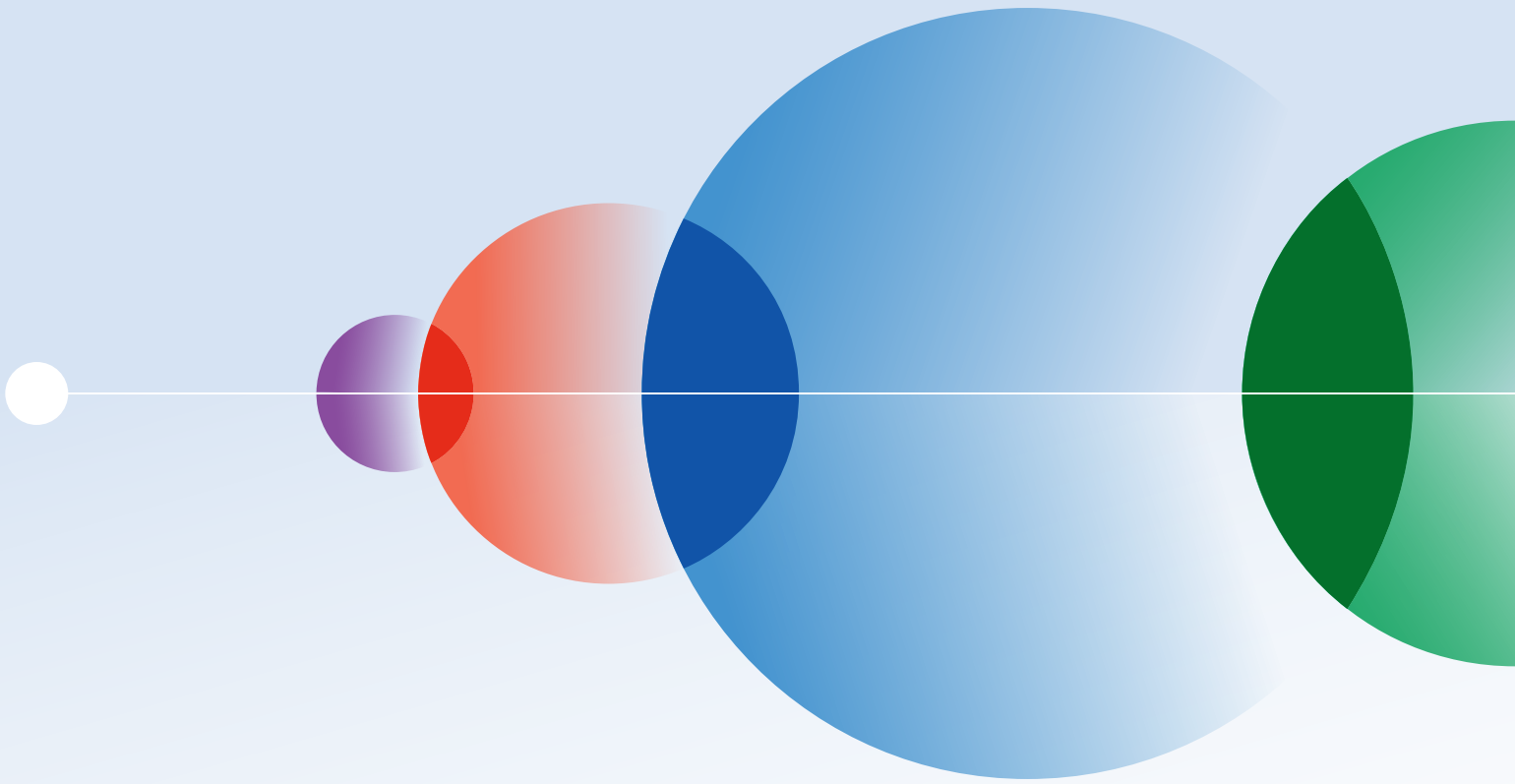
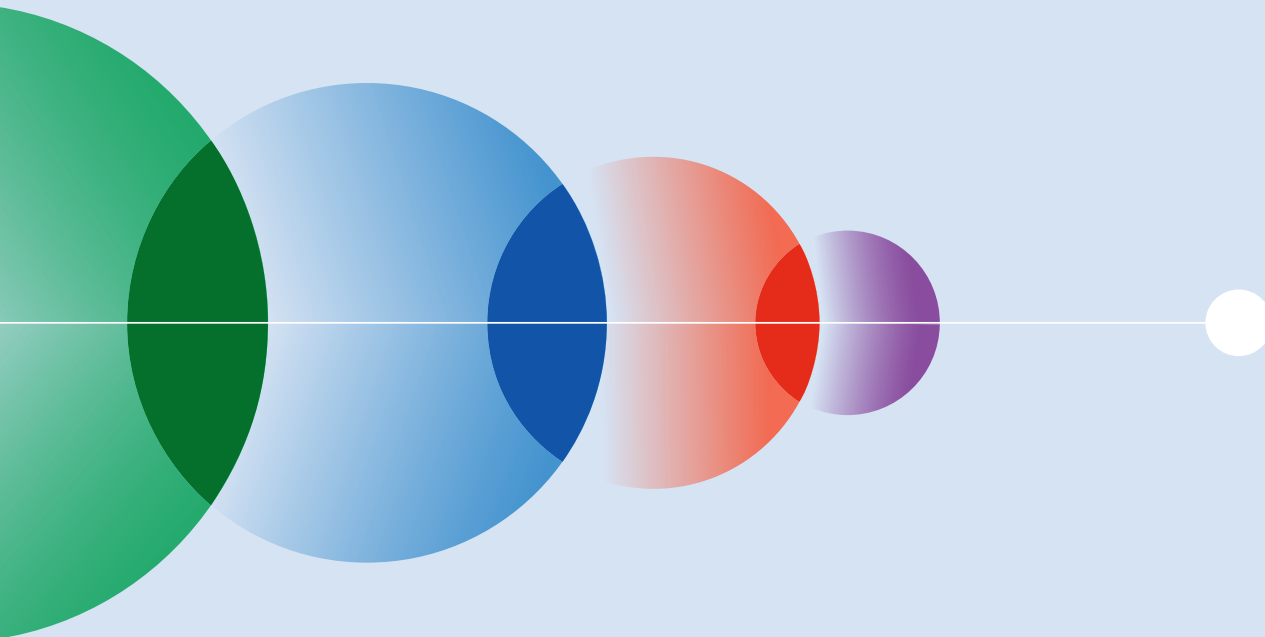


Codebook for Global Student Learning Outcomes

Companion to *Successfully Educating Tomorrow's Global Citizens*





About Global Cities, Inc.

A Program of Bloomberg Philanthropies

Global Cities, Inc. has developed an innovative, data-driven approach to teaching, learning, and assessing global competency for K–12 students. We have identified and defined the knowledge, skills, attitudes, and behaviors that students need to be successful in today’s interconnected world. Through our innovative Global Scholars model of curriculum-guided virtual exchange, we have made global competency both teachable and measurable. Critical to the success of our Global Scholars model are the connections students make with peers around the world in e-classrooms, learning together how to solve global problems. Our research shows that our project-based curriculum, teacher professional development, and these peer-to-peer interactions produce significant growth in students’ appreciation for diversity, cultural understanding, global knowledge, and global engagement. We have tested strategies that drive growth in global learning and produced empirical evidence that students can demonstrate these global learning outcomes from a young age. Our *Codebook for Global Student Learning Outcomes* (2023) is a research-proven tool for researchers and educators to understand and measure to what extent students are demonstrating global learning in any program or classroom.



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Introduction

“Digitalization and globalization have connected people, cities, countries, and continents in ways that vastly increase our individual and collective potential. But being born into a global world does not make people global citizens. It takes deliberate and systematic efforts to create the global competence through which we can share experiences, ideas, and innovation with others, and increase our radius of trust to other countries and cultures. To support those efforts, Global Cities and Harvard’s Project Zero have come up with a *Codebook for Global Student Learning Outcomes* that gives teachers and schools the practical tools to translate those curricular aspirations into high-quality instructional practice.”

Andreas Schleicher

Director for Education and Skills

Organisation for Economic Co-operation and
Development (OECD)



Welcome

What do we need to teach students to equip them to succeed in today's world, and how can we assess their progress? Recent global challenges, whether the Covid-19 pandemic or the acceleration of climate change, have made the need for global competency education clear and urgent. For the past nine years, [Global Cities, Inc.](#) has used the power of direct peer connections to teach 10- to 13-year-old students around the world how to solve global problems. Our virtual exchange program, [Global Scholars](#), has connected more than 103,000 students in 110 cities worldwide. Working together in digital classrooms, they complete a project-based curriculum on common global issues. Through this experience, students recognize their interdependent futures, an important aspect of learning global competency.

Global Scholars students also observe the local impacts of global issues firsthand in their own communities. They share their observations with peers from different cities and cultures to compare how they experience and address similar challenges, often in distinct ways. Through conversations in e-classroom discussion boards, students learn to appreciate and collaborate across cultural differences. Their peers' posts and replies provide a unique primary source for students to understand one another's perspectives and experiences. Discussion board posts and replies also provide educators and researchers with rich empirical evidence of student learning over the course of the academic year.

In partnership with Harvard Graduate School of Education Project Zero's [Out of Eden Learn \(OOEL\)](#), Global Cities has analyzed student writing in e-classroom discussion boards for evidence of students gaining global competency through the Global Scholars virtual exchange approach, using a text-as-data methodology. The findings, reported in [Successfully Educating Tomorrow's Global Citizens](#), provide insight into how students demonstrate global competency and what aspects of our program drive growth in learning.

This *Codebook for Global Student Learning Outcomes* was originally developed to identify global student learning outcomes in discussion boards and measure the extent to which that learning was taking place. It is the first tested tool for examining student writing to understand and measure to what extent and how students are demonstrating global learning over the course of a curriculum in any program or classroom.

A commitment to data and measurement is a key feature of the work of Bloomberg Philanthropies, of which Global Cities is proud to be a part. Collecting empirical data to evaluate student growth, a core educational practice, has been embedded from the beginning in the DNA of Global Cities and the Global Scholars program model. Our focus on measurable results inspired our development of nine student learning outcomes and 112 empirical indicators that define global competency, as described in [Evaluating Global Digital Education: Student Outcomes Framework](#).

Our research demonstrates that the knowledge, skills, attitudes, and behaviors that constitute global competency can be defined, taught, and measured. This is particularly notable in light of findings by the Organisation for Economic Co-operation and Development (OECD). In analyzing the [2018 PISA Global Competence exam](#) taken by 15-year-old students worldwide, the OECD concluded that it is necessary to specifically prioritize and teach these competencies.

This *Codebook for Global Student Learning Outcomes* will help educators and researchers do this important work. It includes the Guide for Curriculum Design and Instruction, which is designed for educators interested in teaching students how to solve global problems and assessing their students' progress. It also includes the Guide for Research and Evaluation, which is intended to be used by researchers to assess student progress in any virtual exchange program or global competency curriculum. We invite you to [join us](#) in the community of educators, evaluators, and policymakers advancing global competency in K-12 education.

Marjorie B. Tiven
President and Founder, Global Cities, Inc.



Overview

The Codebook for Global Student Learning Outcomes is a unique tool for defining, teaching, observing, and assessing progress toward global competency. Students today are growing up in an age of borderless challenges, where the quality of their lives will be affected by decisions made by governments, businesses, and individuals around the world. Upon graduation, they will be expected to compete and collaborate in a global marketplace and will need to work together across cultures and borders to address the shared issues our world faces. Global competency education prepares students to solve global problems, equipping them for a successful future in an increasingly complex and diverse world.

Developing global competency also drives academic achievement. The knowledge, skills, attitudes, and behaviors that prepare students for success in a globalized world also strengthen their achievement and engagement across academic subjects. Students who understand that people experience and solve problems differently across cultures and contexts can apply that lens to their study of all disciplines. Students who seek a range of input and feedback can apply that collaborative approach to math problems and science experiments. Students who consider the perspectives of others become analytical thinkers and strong communicators who can develop effective, nuanced solutions to a range of problems.

This codebook makes it possible to identify when students demonstrate the knowledge, skills, attitudes, and behaviors that define global competency—and use these insights for effective instruction. It is grounded in Global Cities, Inc.'s work to advance global competency education through our [student learning outcomes framework](#), tested instructional approach, and creation of tools needed to assess student progress. We identified nine student learning outcomes that are necessary to thrive in a globalized world and define global competency for K–12 students. They include four global outcomes that are specific to global learning: Appreciation for Diversity, Cultural Understanding, Global Knowledge, and Global Engagement. They also include five general learning outcomes that support global competency and learning across all subject areas: Digital Literacy, Language Communication, Self-Efficacy, Academic Engagement, and Critical Thinking.

What Is Global Competency?

Global Outcomes

- Appreciation for Diversity
- Cultural Understanding
- Global Knowledge
- Global Engagement

General Outcomes

- Digital Literacy
- Language Communication
- Self-Efficacy
- Academic Engagement
- Critical Thinking

See *Evaluating Global Digital Education: Student Outcomes Framework* for a discussion of the nine student learning outcomes that students need to become globally competent adults.



Together with Out of Eden Learn (OOEL), a virtual exchange provider and active research project at Harvard Graduate School of Education’s Project Zero, Global Cities developed this codebook to capture student progress toward the four global learning outcomes.¹ It provides instructions and illustrative examples that equip educators and researchers to recognize evidence of student development toward global learning outcomes, allowing them to effectively guide and assess progress in student learning that has previously been considered difficult to measure. The codebook focuses on the global rather than the general learning outcomes because there has been limited study of global learning in K–12 students, making it critical to develop effective tools for measurement. OOEL used the codebook to analyze data from the [Global Scholars program](#) and found [consistent evidence](#) of students’ global learning.

This tested tool provides guidance for teaching, observing, and measuring global competency in any K–12

classroom or program. In the following sections, you will find information about [how to read the codebook](#) and identify outcomes and indicators most relevant to your work, [how to apply the codebook to inform instruction and observe learning in the classroom](#), and [how to use the codebook for research and evaluation](#).

This work has particular relevance for two groups critical to prioritizing global competency in K–12 education. Researchers can use the [Guide for Research and Evaluation](#) to evaluate the effectiveness of curricula designed to teach global outcomes. Educators, many of whom will be new to using a codebook in the classroom, can use the [Guide for Curriculum Design and Instruction](#) to teach and observe progress in global learning, both within their existing curricula or while creating new curricula. We are interested in hearing from researchers and educators about their experience using the codebook. Please [contact us](#) to join the conversation.

Global Cities, Inc.’s Global Student Learning Outcomes

Outcome	Definition
Appreciation for Diversity	Understanding the myriad ways in which people and perspectives can differ, recognizing and rejecting biases and intolerance, and showing respect and positivity when communicating and collaborating with others, both locally and globally.
Cultural Understanding	What students need to know to communicate with peers from many cultures, whether those peers are from their neighborhood, their physical classroom, or in digital classrooms with students from cities around the world.
Global Knowledge	Knowledge required to understand the world—how it is connected and divided, the people who inhabit it, and the challenges they face. This builds from awareness of basic geography to understanding that global issues are borderless and require solutions that are complex, interdisciplinary, and adaptable to different settings.
Global Engagement	Students’ interest in learning about the world, communicating and collaborating with people from many countries and cultures, and finding solutions to global problems.

See [Evaluating Global Digital Education: Student Outcomes Framework](#) for a discussion of the nine student learning outcomes that students need to become globally competent adults.

¹ See [Research Approach](#) for more information about the need for an evaluation tool and the purpose and development of this codebook.



Global Student Learning Outcomes with Indicators

	Appreciation for Diversity	Cultural Understanding
Knowledge Indicators	<p>Awareness of how one’s life and the lives of others are influenced by broader cultural and historical contexts 1-AD</p> <p>Awareness of one’s culture (behaviors, identity, beliefs) 2-AD</p> <p>Awareness of one’s city and how it relates to other cities around the world 3-AD</p> <p>Awareness of different cultures within one’s school, city, region, country, and world 4-AD</p> <p>Awareness of one’s identity as a citizen of one’s city 5-AD</p>	<p>Understanding how one’s life and the lives of others are influenced by broader cultural and historical contexts 18-CU</p> <p>Understanding of one’s culture (behaviors, identity, beliefs) 19-CU</p> <p>Understanding of one’s city and how it relates to other cities around the world 20-CU</p> <p>Understanding of different cultures within one’s school, city, region, country, and world 21-CU</p> <p>Understanding that problems may be solved differently depending on cultural factors 22-CU</p>
Skill Indicators	<p>Ability to identify and critically reflect on stereotypes in thinking about others 6-AD</p> <p>Ability to listen to others and discuss issues in a respectful and unbiased way 7-AD</p> <p>Ability to ask questions when encountering different perspectives 8-AD</p> <p>Ability to identify and critically reflect on bullying behavior online and in-person 9-AD</p>	<p>Ability to adapt language and content of writing to meet the needs of diverse audiences 23-CU</p> <p>Ability to recognize different perspectives on specific global issues 24-CU</p>
Attitudinal Indicators	<p>Positive attitude towards one’s own culture 10-AD</p> <p>Tolerance of differences 11-AD</p> <p>Responding to differences with openness and positivity, not fear 12-AD</p> <p>Willingness to interact with peers and adults of different backgrounds respectfully 13-AD</p> <p>Willingness to work collaboratively with peers and adults of different backgrounds to achieve shared goals 14-AD</p>	<p>Recognition of different perspectives as legitimate 25-CU</p> <p>Positive attitude towards other cultures 26-CU</p>
Behavioral Indicators	<p>Interacting with people of different backgrounds positively and respectfully 15-AD</p> <p>Working collaboratively with people of different backgrounds to achieve shared goals 16-AD</p> <p>Intervening against intolerant behavior online and in-person 17-AD</p>	

Based on Tiven, M.B., Fuchs, E.R., Bazari, A. & MacQuarrie, A. (2018). *Evaluating Global Digital Education: Student Outcomes Framework*, New York, NY: Global Cities, Inc., a Program of Bloomberg Philanthropies

KEY Numbering denotes unique identifiers. AD Appreciation for Diversity CU Cultural Understanding GK Global Knowledge GE Global Engagement



Introduction

	Global Knowledge	Global Engagement
Knowledge Indicators	<p>Knowledge of local and world geography 27-GK</p> <p>Knowledge of global issues and their local impact 28-GK</p> <p>Knowledge of economics and politics and their impact 29-GK</p> <p>Knowledge of one's city government and differences between city governments around the world 30-GK</p> <p>Understanding that global issues are borderless and affect everyone 31-GK</p> <p>Understanding that global issues are complex 32-GK</p> <p>Understanding that differences in access to information, technology, and resources affect quality of life and perspectives 33-GK</p> <p>Understanding that problems may be solved differently depending on socioeconomic status, natural resources, government policy, and political differences 34-GK</p>	
Skill Indicators	<p>Ability to apply research skills (finding, selecting, and applying information from multiple sources) to global issues 35-GK</p> <p>Ability to find information about global issues using credible sources from around the world 36-GK</p> <p>Ability to synthesize different perspectives on the same topic to draw conclusions about global issues 37-GK</p>	<p>Ability to engage in inclusive problem-solving 41-GE</p>
Attitudinal Indicators	<p>Recognition of the importance of learning about other cities and countries 38-GK</p> <p>Recognition of the importance of learning about global issues that affect us all 39-GK</p> <p>Recognition of the importance of analyzing multiple perspectives 40-GK</p>	<p>Interest in the larger world, particularly unfamiliar people and places 42-GE</p> <p>Interest in global issues 43-GE</p> <p>Recognition of the value of inclusive problem-solving 44-GE</p> <p>Recognition of one's capacity to advocate for and contribute to local, regional, or global improvement 45-GE</p> <p>Appreciation of language learning as a means of communicating and collaborating with people around the world 46-GE</p> <p>Willingness to take action to address global issues 47-GE</p>
Behavioral Indicators		<p>Using digital tools to learn from and communicate with students from cities around the world 48-GE</p> <p>Seeking opportunities to communicate with people in other cities and cultures, as well as one's own 49-GE</p> <p>Seeking opportunities to interact and collaborate with people of different cultures and backgrounds 50-GE</p> <p>Gathering and interpreting information from people in one's own city and culture 51-GE</p> <p>Gathering and interpreting information from people in other cities and cultures 52-GE</p> <p>Presenting information, formally and informally, to people in one's own city and culture 53-GE</p> <p>Presenting information, formally and informally, to people in other cities and cultures 54-GE</p> <p>Working to contribute to local, regional, or global improvement 55-GE</p>



How to Read the Codebook

A codebook is a research tool that describes and illustrates the categories or criteria used to organize, analyze, and draw conclusions from data. This codebook is intended for educators and researchers to define, identify, and observe evidence of the 55 indicators of Global Cities' four global student learning outcomes: Appreciation for Diversity, Cultural Understanding, Global Knowledge, and Global Engagement. It is organized and color-coded by these outcomes. Each of the indicators is featured on its own page(s) and includes the following information.

Indicator Name

Element(s) of learning observable in student speech, writing, and behavior.

Global Learning Outcome

The global learning outcome associated with the indicator.

Developmental Competency Area

Categorization as knowledge, skill, attitude, or behavior.

Indicator Number

A unique number plus the abbreviation of the related outcome.

Coding Instructions

How to identify the various ways a student might show, or not show, the indicator, as well as where and how to distinguish among indicators.

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR	DEFINITION	DEVELOPMENTAL COMPETENCY AREA		
32-GK	Understanding that global issues are complex	Knowledge		
CODING INSTRUCTIONS		EXAMPLE(S) OBSERVED IN DISCUSSION BOARD		
<p>Noting complexity of global issues; Recognizing and identifying the challenges of finding, planning, and implementing viable solutions to global issues; Acknowledging and/or grappling with personal lifestyle/enjoyment versus environmental or social responsibility; Proposing solutions to issues at different levels—individual solutions, neighborhood solutions, infrastructure solutions, etc.; Recognizing that multiple systems are involved/at play and/or explaining explicit ways systems interact (intercity, local-global). Students do not need to explain their understanding to achieve this indicator; acknowledging, identifying, or recognizing is sufficient demonstration.</p>		<p>✓✓✓ Strong ✓✓ Average ✓ Minimum</p> <p>✓✓✓ Dear peers, A water footprint is the amount of fresh water a person uses each day. Knowing our water footprint is important because we need to be aware of how much water we use. We must conserve water or we may waste too much. There are two types of water, actual and virtual. Actual water is water that is actually visible like showering, bathing, etc. Virtual water is water that is hidden in different products such as, bagels, donuts, etc...Using a water calculator, I used 1,371 gallons/5190 liters per day, without noticing how much water I wasted. So, I made certain strategies to conserve water, such as being water wise. For example, I would turn off the faucet/sink while I'm brushing my teeth, or take a shorter shower, so this will lower the number of gallons I use a day. Conserving water will help us in the future needs, such as future droughts Sincerely, N. (NYC - GC Thread ID 38872835 - Post 307, also an example for 55-GE)</p> <p>✓✓ Dear peers, We learned about New York's water system by researching New York City got about 97 percent of its water from the Catskill/Delaware systems and about 3 percent from the Croton system. We was surprised to learn that the water had come from such a far place. Also that there was so much feces in the water system. Also that people waste so much water everyday. We can help my local water supply stay safe and clean by not littering on the streets, and by not clogging the sewage systems. -Sincerely, K., A., L., S., S. (NYC - GC Thread ID 39261457 - Post 454)</p> <p>✓ Dear peers, We were surprised by our water footprint because we didn't know how much water we consume We think the challenge to being water-wise is that we can't use a lot of things that use a lot of water to make. We will be more mindful when it comes to our water consumption in order to be water-wise. Like taking shorter showers. This week, we will be more water-wise by taking a shorter shower, Turn off the sink when brushing ourteeth, using a reusable water bottle and be careful of our actions. Sincerely, A., T. and S. (Everett - GC Thread ID 38767798 - Post 264)</p>		

Examples of Student Work

Discussion board posts and replies demonstrating the indicator at three levels of complexity. strong ✓✓✓ average ✓✓ minimum ✓

All examples are written in English because English is the common language for the Global Scholars program. Examples were not edited or evaluated based on grammar, spelling, or punctuation. To protect student privacy, identifying information and live links have been removed.



Guide for Curriculum Design and Instruction

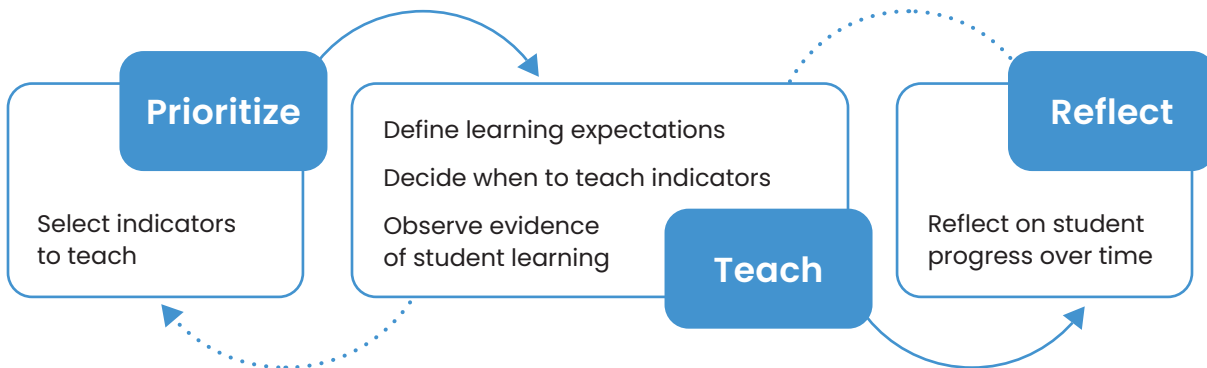
K–12 classrooms play a critical role in shaping students’ understanding of the world. Every day, educators guide students to think critically about complex problems, ask questions to learn more, and exchange perspectives with peers. Global competency education prepares students to leverage these powerful competencies to communicate across cultures and address complex global challenges. The results of OECD’s recent PISA exam underscore the importance of this work. Students will not gain the skills and mindsets they need to succeed in our increasingly interconnected world unless we teach global competency explicitly.²

Importantly, Global Cities’ research confirms that global competency can be taught. Our analysis of Global Scholars e-classroom posts and replies shows that students can learn global competency from a young age and offers

important insights into how that learning develops. Through this research, we created the *Codebook for Global Student Learning Outcomes*, which makes global competency observable and teachable by providing instructions to identify the 55 empirical indicators of global learning in student writing and illustrating each with authentic student work examples. The codebook prepares K–12 educators to set measurable goals, plan instruction, and gauge student progress over time, and can support curriculum design for a classroom, school, program, or district.

It is important to note that developing global competency is a journey that will continue far beyond a single school year. Students will continue this growth throughout their K–12 years and into adulthood. This codebook is a tool to guide their development at any point along the way.

Teaching with the *Codebook for Global Student Learning Outcomes*



Step 1: Prioritize

Use the Global Student Learning Outcomes and Indicators guide to select the most relevant and impactful global learning outcomes and indicators for your curriculum or program. Then, follow these steps to teach and gauge student progress toward each indicator you selected.

Step 2: Teach

Decide when and how you will teach the indicator within your curriculum. Set expectations for learning and observe evidence of growth.

Step 3: Reflect

Analyze student progress over time to inform future curriculum and instruction.

Return to Step 1

Decide which indicators to teach next based on your reflections. Cycle through this process of prioritizing, teaching, and reflecting on selected indicators to guide long-term progress towards the broader global student learning outcomes.

2 OECD (2020), *PISA 2018 Results (Volume VI): Are Students Ready to Thrive in an Interconnected World?*, PISA, OECD Publishing.



Step 1: Prioritize

Select the outcome and indicator you want to teach within your curriculum or program using the Global Learning Outcomes and Indicators guide.

The 55 indicators of global learning capture a range of concrete, observable ways for students to show Appreciation for Diversity, Cultural Understanding, Global Knowledge, and Global Engagement in varied learning environments and at different developmental stages. No educator should expect to teach or observe all indicators in every curriculum. Instead, focus on the outcomes and indicators that will be most relevant and impactful for your students.

A. Review the outcomes and indicators alongside your required curriculum standards, instructional scope and sequence, and/or academic and socioemotional goals. Specific indicators may connect to topics you plan to teach or build foundational skills and mindsets that will drive academic learning across subjects. Examine all 55 indicators, or take one of the following approaches to focus your selection:

- **Select by Column:** Choose indicators from one Student Learning Outcome (Appreciation for Diversity, Cultural Understanding, Global Knowledge, or Global Engagement). For example, a high school social studies teacher may choose indicators from the Cultural Understanding outcome to support students' study of the politics and social structures of early civilizations.
- **Select by Row:** Choose indicators from one developmental competency area (knowledge, skills, attitudes, or behaviors). For example, an elementary teacher may select attitude indicators related to civic engagement from across the learning outcomes to integrate into their classroom routines for read-aloud discussions.

B. Answer the questions below to select indicators that will support your curriculum content and students' needs.

- What do my students need to understand or do to be successful in our class?
- What global knowledge, skills, attitudes, and behaviors will help them meet these goals?

Prioritize by Outcome

1. Choose a global learning outcome.
2. Read down the outcome column. The knowledge, skills, attitudes, and behaviors listed capture a range of ways students may demonstrate the outcomes.
3. Select a few indicators to teach.

	Appreciation for Diversity	Cultural Understanding
Knowledge Indicators	Awareness of how one's life and the lives of others are influenced by broader cultural and historical contexts 1-AD Awareness of one's culture (behaviors, identity, beliefs) 2-AD Awareness of one's city and how it relates to other cities around the world 3-AD Awareness of different cultures within one's school, city, region, country, and world 4-AD Awareness of one's identity as a citizen of one's city 5-AD	Understanding how one's life and the lives of others are influenced by broader cultural and historical contexts 18-CU Understanding of one's culture (behaviors, identity, beliefs) 19-CU Understanding of one's city and how it relates to other cities around the world 20-CU Understanding of different cultures within one's school, city, region, country, and world 21-CU Understanding that problems may be solved differently depending on cultural factors 22-CU
Skill Indicators	Ability to identify and critically reflect on stereotypes in thinking about others 6-AD Ability to listen to others and discuss issues in a respectful and unbiased way 7-AD Ability to ask questions when encountering different perspectives 8-AD Ability to identify and critically reflect on bullying behavior online and in-person 9-AD	Ability to adapt language and content of writing to meet the needs of diverse audiences 23-CU Ability to recognize different perspectives on specific global issues 24-CU
Attitudinal Indicators	Positive attitude towards one's own culture 10-AD Tolerance of differences 11-AD Responding to differences with openness and positivity, not fear 12-AD Willingness to interact with peers and adults of different backgrounds respectfully 13-AD Willingness to work collaboratively with peers and adults of different backgrounds to achieve shared goals 14-AD	Recognition of different perspectives as legitimate 25-CU Positive attitude towards other cultures 26-CU
Behavioral Indicators	Interacting with people of different backgrounds positively and respectfully 15-AD Working collaboratively with people of different backgrounds to achieve shared goals 16-AD Intervening against intolerant behavior online and in-person 17-AD	

Prioritize by Competency Area

1. Choose the most relevant competency area for your class.
2. Read across the competency area row.
3. Select a few indicators to teach.



WHAT DOES PRIORITIZING INDICATORS LOOK LIKE IN THE CLASSROOM?³

Secondary earth science teacher Olga wants her students to apply what they know about interdependent ecosystems to analyze and advocate for the health of their community's people and environment. She predicts that focusing on attitudinal indicators will help her students recognize that what they learn in the classroom has real-world relevance and that they have the capacity to make positive change. Olga reviews all 16 attitudinal indicators and decides to teach three: **39-GK** *Recognition of the importance of learning about global issues that affect us all*, **43-GE** *Interest in global issues*, and **45-GE** *Recognition of one's capacity to advocate for and contribute to local, regional, or global improvement*.

Core Curriculum Connections

Students' global knowledge, skills, attitudes, and behaviors can drive broader academic engagement and achievement across core subject areas. Here are some examples grounded in Global Cities' work with schools and districts around the world:

Social Studies Students who develop *Understanding that differences in access to information, technology, and resources affect quality of life and perspectives (33-GK)* can make nuanced arguments about continuity and change across historical eras.

Math Students skilled in *Gathering and interpreting information from people in one's own city and culture (51-GE)* can draw insightful conclusions from raw data.

Science Students who *Understand that problems may be solved differently depending on cultural factors (22-CU)* can propose and test solutions to scientific challenges that are responsive to local contexts.

Language Arts Students with the *Ability to adapt language and content of writing to meet the needs of diverse audiences (23-CU)* can write effective informational and persuasive texts.

You've selected your indicators. What do you do next?

Choose one indicator to plan for first. Move through the instructional planning activities below. All the activities are interrelated and there are multiple entry points to the planning process. You can follow the order listed or start with what is most relevant to your immediate needs or instructional approach.

For example, you might plan when in your curriculum you want to teach an indicator first and then set lesson-specific expectations. Or you might establish your expectations first and then plan when you will teach the indicator. Each time you complete this process for one indicator, you help students develop toward the overarching learning outcome—and ultimately, towards global competency.

³ The hypothetical examples in this section are grounded in the classroom experiences of Global Cities staff and our work with schools and districts around the world.



Step 2: Teach

Use the coding instructions for the indicator to decide how and when you will introduce it.

Global competency learning is an ongoing process. While you may introduce an indicator during a single unit or lesson, students will benefit from multiple opportunities to practice and deepen their learning over time. The coding instructions break down each indicator into observable, teachable actions you can integrate into lessons and activities throughout the year (see [How to Read the Codebook](#)).

For example, the coding instructions for **1-AD Awareness of how one's life and the lives of others are influenced by broader cultural and historical contexts** name actions you can observe in student writing, speech, or projects, such as:

- Making a connection between the historical past and the present culture.
- Acknowledging connections between one's life and the culture(s) in which one has grown up and/or the historical moment in which one lives.
- Acknowledging that actions taken in the past influence the way people are living today.
- Recognizing that cultural and/or historical components make up one's own identity and those of others.

For each indicator you want to teach, decide which action(s) in the coding instructions will be most relevant and beneficial for your students and when you will teach them at specific points in your curriculum.

- A.** Read the coding instructions for your selected indicator. Note the different actions students can take to show that knowledge, skill, attitude, or behavior.
- B.** Select the action(s) that will be most helpful for your students to practice. These are the actions you will teach explicitly. Note: The actions named within the coding instructions are not intended to be sequential, and you do not need to teach all actions for any one indicator.
- C.** Determine when you will teach the action(s) you selected. Consider how these actions fit thematically with specific units or how you might integrate them into a routine or learning activity students will practice throughout the year. Answer the questions below:
 - At what point(s) in your curriculum will this action help students achieve instructional goals?
 - Is it best to teach this action through a stand-alone lesson, during one or several units of study, or consistently throughout the year (e.g., during class discussions)?
- D.** Write student learning objectives that pair the global learning indicator with class content. The objectives may align to a single lesson, series of lessons, curriculum unit, or academic year.



WHAT DOES THIS STEP LOOK LIKE IN THE CLASSROOM?

Primary math teacher Nushi wants her students to demonstrate **3-AD Awareness of one's city and how it relates to other cities around the world** as part of an upcoming geometry unit. The indicator's coding instructions name "comparing aspects of one's own city (e.g., culture, technology, local environment, environmental issues, etc.) to those of another city" as one way for students to show this knowledge. Nushi knows that relating geometry to the buildings students see in their everyday lives will help them better understand key mathematical concepts and increase engagement. She plans to have students collect images of shapes they observe in their neighborhoods to create a class collage of local architecture. She will ask what they notice about the shapes in their local examples, then show and discuss a slideshow of architecture from different cities around the world. This will both reinforce students' geometry knowledge and develop their appreciation for the diversity of built environments. She writes the following student learning objective into her unit plan: *Students will be able to recognize and define the properties of triangles, quadrilaterals, pentagons, and hexagons by comparing images of architecture from around the world.*

There are infinite ways to teach global competency, and global learning indicators can be incorporated into any of the instructional methods you use in your classroom. For example, Nushi plans to achieve her instructional objective through neighborhood observations, a class collage, and a slideshow discussion of international architecture. Another teacher may teach the same objective by playing a video of architecture in a different city and pausing to trace the shapes he sees on screen. A third teacher may assign students different cities' architecture to research independently before presenting the shapes they observed to the class. All three classes would ultimately both achieve the math objective and gain understanding of how architecture in their city compares to the architecture of other cities. What is critical is to be intentional about identifying, teaching, and observing global indicators within your curriculum.

Reference the indicator's coding instructions and examples to define global learning expectations for your class.

The codebook includes examples of authentic student work that illustrate what it looked like for Global Scholars students ages 10 to 13 to demonstrate each indicator at strong (✓✓✓), average (✓✓), and minimum (✓) levels of complexity.⁴ The examples are taken from over the course of a nine-month program year when students studied the issue of water security. Review these examples, then define what it would look or sound like for your class to apply the same indicator based on your knowledge of your curriculum and students. What might students say and do to show they are both learning content and practicing the indicator?

- A. Read the codebook examples for your indicator to answer:
 - How do students show the indicator in different ways?
 - What commonalities and differences do I see among the examples? What does this suggest about how students learn this indicator?
 - What ideas does this suggest for what this learning will look like for my students?
- B. Define what you want your students to say or do to demonstrate the student learning objective(s) you selected by creating an exemplar, checklist, and/or rubric that is specific to your content and reflects your students' skills and knowledge. Share and discuss these materials with students to make your expectations clear.

⁴ Note: All examples are written in English because English is the common language for the Global Scholars program. Examples were not edited or evaluated based on grammar, spelling, or punctuation. To protect student privacy, identifying information and live links have been removed.



Compare student work to your exemplar, checklist, or rubric to observe evidence of learning.

During and after your lesson, gauge the extent to which students are meeting your learning expectations for the indicator to provide feedback and identify opportunities for whole-class instruction or individual student support. Gather student work (e.g., written reflections, class notes, exit slips, etc.) where you expect to see evidence of the indicator and look for **strengths** and **growth areas**. Take these steps:

- A.** Review your indicator exemplars, checklist, or rubric alongside student writing to recognize **strengths** and answer these questions:
- What evidence do I see of students demonstrating this indicator?
 - Where are they applying the actions I taught?
 - How are they showing learning in ways I may not have explicitly taught or expected?
- B.** Review your indicator exemplars, checklist, or rubric alongside students' writing to recognize **growth areas** and answer these questions:
- What actions do I want to see students take next?
 - What can I do to help them get there? Will I modify the methods or activities that produced strong results or introduce new ones?
 - What work can I gather to look for evidence of future growth?

Then, share and celebrate examples of strengths with your students. Note which methods and/or activities produced strong results so you can replicate or modify them in the future.

WHAT DOES DEFINING EXPECTATIONS LOOK LIKE IN THE CLASSROOM?

Primary language arts teacher Wei plans to teach **24-CU** *Ability to recognize different perspectives on specific global issues*. Wei knows that while students frequently exchange perspectives about shared texts, they have not had many opportunities to exchange perspectives on the specific global issues these texts raise. The year's reading list broaches the global topics of migration, climate, and the global food system. After reviewing the codebook instructions and examples, Wei writes the rubric below to define expectations for how students will demonstrate **24-CU** when discussing these texts.

Foundational

Students acknowledge that not everyone will have the same opinion about a specific global issue within a text and name their own perspective (e.g., "There are different perspectives on this issue. In my opinion, ...").

Developing

Students identify different perspectives on a specific global issue in a text and explain their own perspective. They may offer basic explanations about the distinctions among perspectives (e.g., "We both want X, but I think Y and you think Z.").

Advanced

Students explain the distinctions between different perspectives on a specific global issue in a text and how their own perspective aligns and diverges from others (e.g., "We both want X, but for different reasons. I want X because...and you want X because...").



- C.** Use your observations of strengths and growth areas to:
- Provide feedback to individual students.
 - Provide differentiated supports or supplemental materials to individuals or groups (e.g., sentence starters, group work protocols, etc.).
 - Reteach indicator action(s) in a new way to address common growth areas.
- D.** Prompt students to self-reflect on their own progress:
- Ask them to compare their work to your exemplars, checklist, or rubric and answer, “What did I do well? What do I want to get better at or do more of?” This will prepare and motivate them to strengthen the knowledge, skill, attitude, or behavior.
 - Give students opportunities to revisit their reflections, recognize and celebrate their progress, and set new goals for themselves.

WHAT DOES OBSERVING EVIDENCE OF LEARNING LOOK LIKE IN THE CLASSROOM?

After connecting in an online educator group, secondary physics teachers Antonio (New York) and Ahmed (London) collaborated on a unit on Newton’s laws of motion to teach **48-GE** *Using digital tools to learn from and communicate with students from cities around the world*. Students from both cities worked together in discussion boards to design experiments and share data. They illustrated Newton’s laws with local transportation and sports examples and co-published their findings in digital presentations. In reviewing the projects, Antonio and Ahmed observed that students effectively employed a range of media to create clear and interesting explanations of Newton’s laws. However, when they compared the discussion board conversations to the **48-GE** coding instructions, they noted that students often discussed physics content with one another but rarely demonstrated how their exchanges gave them new ideas about each other’s lives. Based on this observation, Antonio and Ahmed developed sentence starters that prompt students to cite and respond to the aspect of culture reflected in one another’s posts. They plan to model this behavior by using the sentence starters to reply to one of the presentations, then have students use them to write their own replies.

Step 3: Reflect

Reflect on student progress over time to inform future curriculum and instruction.

Observe how students demonstrate learning an indicator across a unit, semester, or year to better understand individual and class growth. Your observations also can help identify where students showed the most progress and where their learning did not match your expectations. Refer to these insights when developing future curricula.

- A.** Collect a range of student work created at varying times throughout a unit, program, or school year (e.g., discussion board posts and replies, recorded classroom dialogue, student portfolios, etc.).
- B.** Review the coding instructions for this indicator and your exemplars, rubrics, or checklists to remind yourself of your expectations.



C. Reflect on the evidence of learning:

- How did students demonstrate the indicator over time? Did they show their learning in different ways at different points?
- Were there topics, lessons, or units of the curriculum where you see greater evidence of learning? What do you think made those moments successful?
- Were there topics, lessons, or units where you expected to see evidence that did not appear? Why might this have been the case?

D. Identify adjustments you can make to your curriculum to support continued growth. You might:

- Revise your existing lessons to reflect the activities and methods that most effectively drove student learning.
- Identify opportunities to share best practices with other educators and strategize around how to drive further progress (e.g., at grade-level meetings, during collaborative planning periods, etc.).
- As you plan future lessons, target new actions for the same indicator to guide students toward more complex thinking or behaviors. Identify complementary indicators to teach going forward.

WHAT DOES REFLECTING ON STUDENT PROGRESS LOOK LIKE IN THE CLASSROOM?

Secondary history teacher Sade taught students to show **29-GK** *Knowledge of economics and politics and their impact* over the course of a semester that was focused on ancient civilizations. He has gathered a collection of student journal entries, seminar notes, and short answer responses. He compares them with the codebook page and the indicator checklist he created to determine what types of assignments best prepared students to explain how government policies and economic forces impacted social life. He notices students demonstrated the indicator most strongly after they engaged in simulations of the civilization they studied, such as when they created a class economy based on Mesopotamian trade systems. In curriculum units when students read about a civilization's economy and politics but did not participate in a simulation, they were less likely to show the same level of knowledge. Sade predicts that if he incorporates simulations into every curriculum unit, his students will demonstrate the indicator more consistently. He plans to invite colleagues to observe future simulations so they can see how these activities drive student learning and look for ways to refine them.

After completing the cycle, begin again at Step 1: Prioritize.

After your detailed reflection, zoom back out to reflect on student growth across priority indicators and set goals for the future. You may decide to focus on more advanced actions for indicators you previously taught, or you may select new indicators. These may be indicators of the same student learning outcome or a different one. By continuously using the codebook to set goals, design learning experiences, and reflect on global competency growth, you will ensure that your students are receiving the opportunities and supports they need to develop into thoughtful and engaged global citizens.



Guide for Research and Program Evaluation

First developed to observe student growth in the Global Scholars program, the *Codebook for Global Student Learning Outcomes* can be used to evaluate how any curriculum develops students' global competency based on the four global learning outcomes and 55 related empirical indicators.⁵ As of June 2023, two additional applications of the codebook are in process to analyze data from other global competency virtual exchange programs. The third-party evaluation firm Glass Frog Solutions is working with both OOEL and AFS Intercultural to apply the codebook to data from their discussion boards. Such evaluation is critical to demonstrating the value of global competency programs and curricula, as well as to inform continuous improvement. Our conceptual framework, [Evaluating Global Digital Education: Student Outcomes Framework](#), and this codebook can be used by both researchers and evaluators of global competency.

Researchers can use the framework and codebook to develop, test, and validate hypotheses to produce new knowledge in the field of global competency. Evaluators can also produce new knowledge; however, their work is context-specific and is defined in terms of “merit, worth, value, or significance,” according to the American Evaluation Association. Evaluators generally provide information that can help determine the effectiveness of policy, program design or, in education, pedagogy and curricula. Evaluation can also inform decisions about where resources should be targeted.⁶

Researchers and evaluators can analyze data sets for evidence of any global learning outcome by using either the full set or a subset of indicators to capture evidence. These tools also can show how students demonstrate this learning over time, including which elements of a program or curriculum are associated with student learning and target areas for growth. The guidance below is intended for coders, or the researchers and evaluators who will systematically examine student work for evidence of global learning. (Detailed guidance for educators is featured in the [Guide for Curriculum Design and Instruction](#).) It is important for coders to familiarize themselves with the curriculum they plan to analyze—both the overall structure and specific assignments. This will aid in understanding the focus and intent of each assignment, as well as any specific curriculum prompts students incorporate into their work.

1. Each coder should focus on a small subset of indicators and consider coding a single indicator at a time to allow greater depth of understanding of how each is demonstrated. There are many ways to group the 55 indicators, such as by student learning outcome or developmental competency area. Do not code for all 55 empirical indicators at once.
2. Assign at least two coders to code observations for each indicator. This ensures that all observations are reviewed by more than one person and allows coders to check for inter-rater reliability. For large data sets such as the Global Scholars discussion boards, inter-rater reliability can be determined by using a subset of the sample (e.g., 10 percent of the data) before coding the full sample.

⁵ To learn how the *Codebook for Global Student Learning Outcomes* was developed and tested, see [Appendix: Research Approach](#).

⁶ See Dana L. Wanzer, “What is Evaluation? Perspectives of How Evaluation Differs (or Not) From Research,” *American Journal of Evaluation* 2021, Vol. 42(1) 28–46 and Miri Levin-Rozalis, “Evaluation and Research: Differences and Similarities,” *The Canadian Journal of Program Evaluation* January 2003, Vol. 18 (2): 1–31.

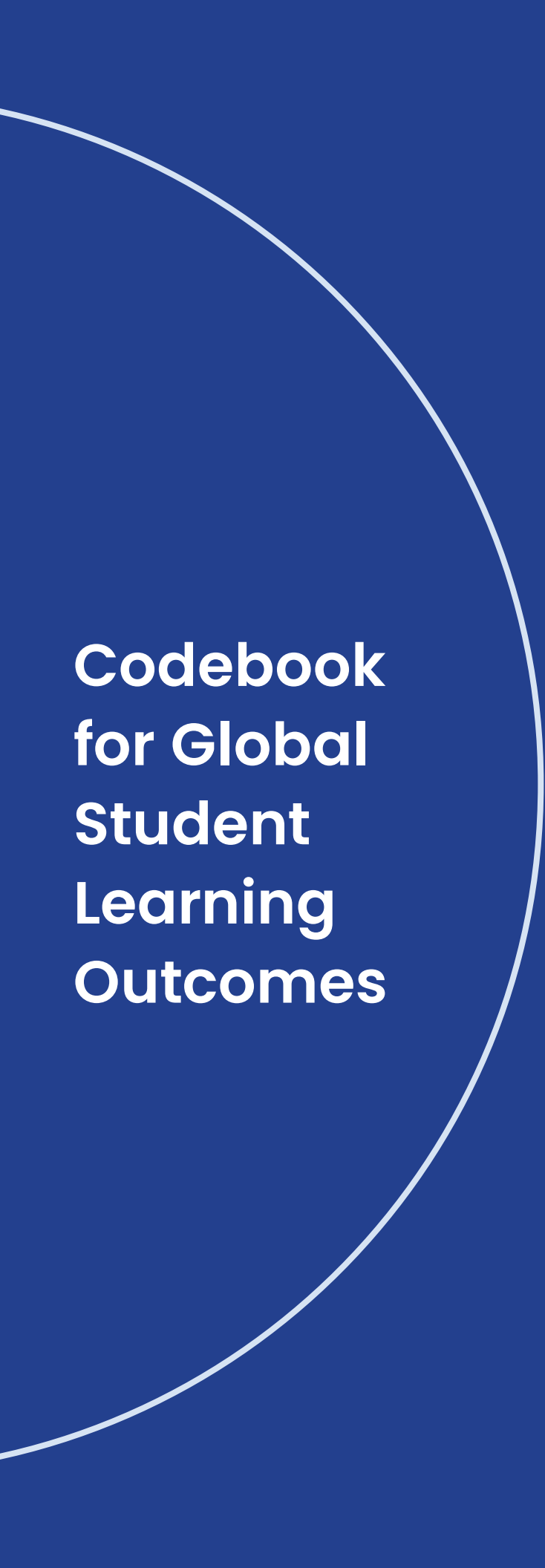


Introduction

3. Before beginning the coding process, researchers and evaluators should choose a method for determining inter-rater reliability (e.g., percent agreement or Cohen's kappa) and an acceptable reliability value.
4. Each of the 55 indicators is unique and differentiated by a set of written instructions so it can be observed and measured discretely. While certain indicators are likely to appear together in the data (as noted in the coding instructions for those indicators), it is important to code these demonstrations separately to capture their distinct meanings and maintain the integrity of the analysis.
5. To capture varied evidence of student learning, code for a wide range of demonstrations of each indicator. Select a sample that reflects work from different assignments or units as well as the demographics of students using the curriculum being studied. This will ensure your sample is more representative and allow you to distinguish different levels of complexity in the demonstration of global learning outcomes, both in terms of individual indicators and across indicators.
6. Coders may find evidence of multiple indicators in the same student work sample, both within and across outcomes. Using a qualitative data analysis software application (e.g., Dedoose) can help capture this complexity, enabling you to code a single piece of text for multiple indicators and allowing multiple coders to code the same data.
7. In some cases, coding instructions note examples of what does *not* constitute evidence of student learning for an indicator. This information can be used to distinguish subtle differences among indicators. It is important for coders to study these distinctions before and throughout the coding process. This is especially the case for indicators with coding instructions that include specific guidance on how to distinguish them from others (e.g., **34-GK**, **43-GE**, and the paired Appreciation for Diversity and Cultural Understanding indicators **1-4 AD** and **18-21 CU**).⁷

Applying this methodology will produce evidence of how frequently students demonstrate each learning outcome and indicator, where in the curriculum this learning is demonstrated, and what aspects of learning appear together in the data. These in turn provide rich insights into how and why students are learning global competency. To see how the codebook was used to capture and analyze data from the Global Scholars program, see [Successfully Educating Tomorrow's Global Citizens](#).

⁷ There are four pairs of indicators that reflect the progression from initial awareness (associated with Appreciation for Diversity) to deeper understanding (associated with Cultural Understanding):
1-AD Awareness of how one's life and the lives of others are influenced by broader cultural and historical contexts and **18-CU** Understanding how one's life and the lives of others are influenced by broader cultural and historical contexts
2-AD Awareness of one's culture (behaviors, identity, beliefs) and **19-CU** Understanding of one's culture (behaviors, identity, beliefs)
3-AD Awareness of one's city and how it relates to other cities around the world and **20-CU** Understanding of one's city and how it relates to other cities around the world
4-AD Awareness of different cultures within one's school, city, region, country, and world and **21-CU** Understanding of different cultures within one's school, city, region, country, and world



Codebook for Global Student Learning Outcomes

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR	DEFINITION			DEVELOPMENTAL COMPETENCY AREA
1-AD	Awareness of how one’s life and the lives of others are influenced by broader cultural and historical contexts			Knowledge

CODING INSTRUCTIONS

Acknowledging connections between one’s life and the culture(s) in which one has grown up and/or the historical moment in which one lives; Acknowledging that actions taken in the past influence the way people are living today; Recognizing that cultural and/or historical components make up one’s own identity and those of others. If students make a connection between the historical past and the present culture, this code should be used. Just mentioning a date without making a connection to one’s culture or life does not suffice. Do not code if simply naming a cultural component/feature without connecting it to their life or others’ lives.

To distinguish between “awareness” (1-AD) versus “understanding” (18-CU *Understanding how one’s life and the lives of others are influenced by broader cultural and historical contexts*), in 1-AD awareness would be demonstrated by mentioning a connection between one’s life and the culture/historical context. In 18-CU, understanding would be demonstrated by going a step further and explaining how or why that connection exists.

During the creation and testing of the codebook, 1-AD and 18-CU were treated as mutually exclusive to delineate “awareness” and “understanding.” All excerpts of posts and replies coded as evidence of 1-AD were therefore not coded as evidence for 18-CU. Future applications of the codebook may code these two indicators independently or double code “understanding” as implicit evidence of “awareness.”

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

- ✓✓✓ Hi Global Scholars, I would like to tell you about a water activity in my culture called Swimming Nadal Cup The story of how this activity began is: The Swimming Nadal Cup is a traditional swimming competition that takes place in the port of Barcelona every December 25, Critsmas day. The first edition of the Nadal Cup was organized on crhistmas in 1907, wich turns in into the oldest sporting event in Barcelonaand one of the oldest in Europe People participate by go to competing and obserbing the race. One fact you may find interesting is: The particularly of the contest is that is takes place on Cristmas day, at the beginning of the winter, and when temperatures are lower in Barcelona. Onmultiple occasions the event has been carried out under the snow. It is usual to see many swimming take the test dressed up witch Cristmas motifs. Your friend M. (Barcelona - GC Thread ID 38766621 - Post 256)
- ✓✓ Hi Global Scholars, I would like to tell you about a water activity in my culture called scuba-diving. The story of how this activity began is at first, humans dived underwater to hunt fish. Nowadays, we do it for the beautiful underwater scenery! People participate by putting on their scuba-diving gear, then diving in the ocean. One fact you may find interesting is the most popular diving spot in Indonesia is Raja Ampat! Your friend, H. (Jakarta - GC Thread ID 38624941 - Post 211)
- ✓ One thing that you can do in the summer that involves water is whale watching. Before the used to do this just to get the oil from the whales skin. Another thing that you can do in the summer that involves water in Boston is going on a duck boat. Did you know that the duck boats are really real big cars that also can drive on land. these are some things that you do when you come to Boston. (Everett - GC Thread ID 38468423 - Post 170)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 2-AD Page 1 of 2	DEFINITION Awareness of one's culture (behaviors, identity, beliefs)			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Demonstrating familiarity with one's cultural identifiers (behaviors, identity, beliefs); Noticing one has a culture; Situating oneself in relation to culture. Code when students discuss shared behaviors or beliefs in their school, neighborhood, family, or other group with which they identify.

Do not code if they are simply stating they do not have the same culture/cultural identifiers as another student. Do not code when students mention isolated facts that do not relate to a shared cultural practice in the place where the student is located or a place or community to which they feel affiliated. Do not code if they are saying something like, "we have a pool," or "we have a library," unless they relate it to some shared activity, history, belief, or value. For example, the following would not be coded: "I think what you shared is interesting because there is also a really rare fish call Formosan landlocked salmon in Taiwan, and it almost extinct once," or "we have monuments." Do not code mentions of weather/climate when they are isolated facts that are not connected to culture.

Do code discussions of weather/climate in the context of how they influence shared values, characteristics, or norms. Do code if there is some acknowledgment of the meaning or symbolism of the physical or built environment as it relates to culture.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear H., Thank you for sharing your infographic. I enjoyed the images and graphs as they conveyed the point of your survey, as well as showed the variation between males and females, which is quite interesting to see. I learned that most people in (I assume) Shanghai are quite worried about people's access to clean drinking water, and most of these people are willing to take action by either changing their behavior or teaching others about the issue. **A similarity in water-related issues in our cities is that both of our cities are quite worried about 3rd world countries' access to clean water. A difference, however, is the actions they would take to help keep the Earth sustainable. In your city, citizens would rather teach others about the issue, and change their behavior, whereas in my city, we would rather donate to charities. I believe that this is because citizens of my city do not care as much about the well-being of disadvantaged people, hence why they are not willing to take much action. The solutions you proposed would not work in my city, as people are unwilling to take action, and change their fixed mindset. In other words, once we are used to doing something, such as overusing water, it is hard to get us to stop.** Sincerely, M. and M. (Toronto - GC Thread ID 40472304 - Post 935)

✓✓ Hello A., how are you? For me, the most famous monument, that I like the most, and the most unique is: Gaudi's monuments. **The food is quite original we usually eat chesnuts, turron, bread with tomato. Catalonia has its own language, and also its own flag. Handball is a sport we play a lot here.** bye,bye A. (Barcelona - GC Thread ID 37897460 - GC Provided)

✓ Hello everyone! My name is S. and I am from London. My favourite activities are gaming and art because I find it fun and enjoyable. **My city is unique and interesting because we have royalty people.** An important fact you should know about water in my city is recently, we have a whale in the river Thames. What I would like to know about to know my international peers is does your country have a river. Sincerely, S. (London - GC Thread ID 37878109 - Post 41)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 2-AD Page 2 of 2	DEFINITION Awareness of one's culture (behaviors, identity, beliefs)			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

To distinguish "awareness" (2-AD) from "understanding" (19-CU *Understanding of one's culture*), naming a tradition would fall under 2-AD; explaining the reason or meaning behind a tradition or how it affects people's lives would be 19-CU.

During the creation and testing of the codebook, 2-AD and 19-CU were treated as mutually exclusive to delineate "awareness" and "understanding." All excerpts of posts and replies coded as evidence of 2-AD were therefore not coded as evidence for 19-CU. Future applications of the codebook may code these two indicators independently or double code "understanding" as implicit evidence of "awareness."

Note from Global Cities: "we waste a lot of food" could be tagged with 2-AD *Awareness of one's culture*. The "we" shows awareness that culture is a group phenomenon, and the "waste a lot of food" is an action that reflects group norms or customs related to food use. If the student explained why they waste a lot of food or provided additional details, then the post could be tagged with 19-CU *Understanding of one's culture*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 3-AD	DEFINITION Awareness of one's city and how it relates to other cities around the world			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Recognizing there are differences between another student's lived experience in their city and one's own; Comparing aspects of one's own city (e.g., culture, technology, local environment, environmental issues, etc.) to those of another city. If students are specifically comparing their schools (e.g., their facilities), do not code. However, if a student mentions a relationship where it is unclear if the unit of analysis is their city or the broader country, still code. To distinguish "awareness" (3-AD) from "understanding" (20-CU *Understanding of one's city and how it relates to other cities around the world*), code as 3-AD if a student is simply naming a similarity and/or difference. If the student provides an explanation of why the similarity and/or difference exists, code as 20-CU.

During the creation and testing of the codebook, 3-AD and 20-CU were treated as mutually exclusive to delineate "awareness" and "understanding." All excerpts of posts and replies coded as evidence of 3-AD were therefore not coded as evidence for 20-CU. Future applications of the codebook may code these two indicators independently or double code "understanding" as implicit evidence of "awareness."

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear classmate, **The challenges of being water-wise in your city are different than in my city because we not use water to clean up the streets when it rains we just let the water from the rain dry up.** Something (Everett - GC Thread ID 38732665 - Post 335, also an example for 11-AD)

✓✓ Hey Shanghai! I really enjoyed your video. It was so funny and I loved how you guys showed a little about your personality. **In my city we are lucky enough to have safe water to drink. From your video I learned that not everybody has the same benefit of clean safe drinking water.** I noticed that you guys have a nice library and so do we. One question I have is do you guys have any sort of body of water near your school? -E. (Medford - GC Thread ID 38565309 - Post 158)

✓ Dear peers at in Everett. Thank you for sharing your video!Our class really enjoyed pictures. Thank you for teaching us that your school has a long history. **A similarity our citiesshare is the water is important.** A question we have about your city is if the water in the lakes is clean? Sincerely, Your friends in Beijing. (Beijing - GC Thread ID 38513722 - Post 111)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 4-AD Page 1 of 2	DEFINITION Awareness of different cultures within one’s school, city, region, country, and world			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Recognizing that there are different cultures within one’s school, city, region, country, and world. Acknowledging that there are connections and comparisons between different cultures within one’s school, city, region, country, and world. Anytime a student mentions a group—e.g., Christians—assume that they are acknowledging that different cultures exist and therefore code for this indicator. Such a group can either be one that the student belongs to/identifies with or one the student views as separate. At a global level, the student needs to explicitly acknowledge a multitude of cultures in the world. To distinguish “awareness” (4-AD) from “understanding” (21-CU *Understanding of different cultures within one’s school, city, region, country, and world*), code as 4-AD if a student is naming the presence of different cultures; code as 21-CU if the student acknowledges multiple cultures and explains aspects of one or more of those cultures.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi everyone, My name is I. and I live in Florida. My favorite activities are playing soccer and dancing. I like to play soccer because I feel like it challenges me to do my best. I love dancing because I come from a Hispanic family and because I feel like I have control over my body and can go as fast or as slow as I want I can also express myself through dancing. My city is unique and interesting because where I live we are right next to the Everglades. The Everglades is a national park that is 1.5 million acres and consist of multiple species of wildlife. The Everglades is also considered to be a marsh. A marsh is a type of wetland, an area of land where water covers ground for long periods of time. **Another example of why my city is unique is that it is very multi-cultural. Multi-cultural is relating to, reflecting or adapted to diverse cultures. I think that living in my city is great because I have the opportunity to meet so many people from different places and understand their culture.** We also have many beaches here. This encourages tourism. What I would like to know about my international peers is how many bodies of water are near your area? Our tap water is safe to drink because it goes through an aquifer system. Is your water safe to drink? Sincerely, I. (Broward - GC Thread ID 37957322 - GC Provided)

✓✓ The wastewater solution that I learned about that would be the green roofs because Jacksonville uses sewers to get rid of rain/ storm water and I think these roofs would not only help us but help the environment. **My city uses sewers and gardens already. Most people in my city have gardens, surprisingly I don’t have one.** (Jacksonville - GC Thread ID 39601682 - Post 542)

✓ Hello C. Nice to meet you. My name is T. I’m from Taiwan. I like to do human towers, too. It is so fun and interesting. **Our country is beautiful and we have a lot of cultures, too.** Can you please explain more about Barceloneta? I really want to know more about it. What kind of food or drink is yummy there? I am very interested in Spain! Maybe you can teach me some Spanish and I can teach you some Chinese. (Taipei - GC Thread ID 38080923 - GC Provided)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 4-AD Page 2 of 2	DEFINITION Awareness of different cultures within one’s school, city, region, country, and world		DEVELOPMENTAL COMPETENCY AREA Knowledge	

CODING INSTRUCTIONS

Do not code if students mention specific differences in beliefs (e.g., about global warming, deforestation, or recycling) without mentioning any context (e.g., city, country, or world) or a specific group identity or culture (e.g., “not everyone disregards extreme weather”). Responses that include a concrete difference at a specified location/level can be coded (“I learn that many people don’t have access to clean drinking water in Shanghai”). Asking questions that allude to but do not directly reference different cultures (“Does everyone waste food?”) are not coded here, since they do not demonstrate a current awareness about different cultures. Such questions are coded in 8-AD *Ability to ask questions when encountering different perspectives* and/or 42-GE *Interest in the larger world, particularly unfamiliar people and places*.

During the creation and testing of the codebook, 4-AD and 21-CU were treated as mutually exclusive to delineate “awareness” and “understanding.” All excerpts of posts and replies coded as evidence of 4-AD were therefore not coded as evidence for 21-CU. Future applications of the codebook may code these two indicators independently or double code “understanding” as implicit evidence of “awareness.”

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 5-AD	DEFINITION Awareness of one's identity as a citizen of one's city			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Acknowledging one's role as a citizen of one's city beyond simply naming where one lives (e.g., naming the importance of raising awareness about electricity use in one's own city); Expressing a sense of responsibility ("I must"); Expressing a sense of belonging. Only code instances where students explicitly name their own sense of responsibility or belonging to their city or community specifically. This indicator is distinct from 45-GE *Recognizing one's capacity to advocate for and contribute to local, regional, or global improvement*. Statements about one's capacity or sense of agency (e.g., "I can..." or "Something I can do to prevent pollution in my city is...") should be coded 45-GE. Posts/replies where "I can" statements are accompanied by statements that also explicitly name a sense of responsibility towards one's city should be double coded 45-GE and 5-AD.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Did you know that there is a floating patch of garbage in the Pacific Ocean called the Great Pacific Garbage Patch? The Great Pacific Garbage Patch is a patch of garbage in the Pacific Ocean three times the size of France. The Great Pacific Garbage Patch is one of many sites of pollution in the world. **One effect of pollution in my city is that the animals are in danger due to the amount of plastic and trash on the ground. This is a problem because the trash looks like food to the animals so they eat it and get sick. This type of pollution is not only a threat to land animals, but also marine life in our local waterways. One way that I can help solve this problem is to volunteer to pick up trash. Another way I can help is by trying to raise awareness.** While doing research, I was surprised to learn that some cities like Haverhill intentionally make the pipes overflow so the wastewater doesn't enter local houses and businesses which hurts the environment. Sincerely, M. This is a picture of the Great Pacific Garbage Patch. (Medford - GC Thread ID 40238490 - Post 775)

✓✓ Dear W., Thank you for sharing. We learned from you that it Taipei the mudslide is common after a heavy rain. A difference between how climate change impacts our cities is that the mudslide here is very rare. **We think that not all members of our community are concerned about climate change because our city is wasting rubbish away but we are trying to change it.** We would like to know how many times a year you have mudslides. Sincerely, A., J. and O. (Barcelona - GC Thread ID 40342492 - Post 827)

✓ Hello Global scholars Our solution is no to through plastic into the sea to no damage our sea animals and to no pollute our water. **Also is very important to keep clean our cities.** Your friends, O. and M. (Barcelona - GC Thread ID 39692235 - Post 609)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 6-AD	DEFINITION Ability to identify and critically reflect on stereotypes in thinking about others			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Noticing and naming stereotypes and the impact of these stereotypes on people and communities; Asking critical questions and/or naming criticisms about stereotypes to oneself, one's community, and/or one's online peers; Reflecting on one's own bias; Articulating why prejudices should be rejected.

Note from Global Cities: Evidence of this indicator is unlikely to be found in Global Scholars discussion boards because posts exhibiting stereotyping are immediately hidden from view, so there are no opportunities for this indicator to be observed during the discussion board analysis unless students are posting reflections on hypothetical incidents, incidents that happened outside of the platform, or acknowledging and/or countering stereotypes about groups to which they belong.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found
✓✓ Dear J. (I love your name so much!! :D), It's nice to meet you! You taught me that Paris isn't just a beautiful and perfect place as everyone stereotypes it as, it can be normally hectic and frantic too. A similarity we have in common is that we are both interested in different arts. A difference we have in our schools is that my school starts at 8:10 and ends at 2:55pm. Also, our cities differ in which we don't have a metro, but we do have buses. A question I have about your city is about how many people/tourists visit Paris each year? Sincerely, G. (Jacksonville - GC Thread ID 37873337 - GC Provided)
✓ None Found

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 7-AD	DEFINITION Ability to listen to others and discuss issues in a respectful and unbiased way			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Giving a response that shows evidence of careful listening, reading, or observing through respectful discussion of issues, e.g., respectfully commenting on or posing a question about something specific that another student included in their post and/or making statements that suggest how someone else’s post gave them a new perspective or new information (e.g., “You taught me that...”). The emphasis here is on respectful communication that demonstrates a student has listened to another person. The “issues” discussed can be any topic—including, but not limited to, global issues or curriculum projects as well as personal interests or anecdotes.

Note: This does not include illustrations of listening that are simply responses to other students’ questions. This is distinct from 51-GE *Gathering and interpreting information from people in one’s own city and culture* which involves more formally collecting and analyzing data from others.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ What I enjoyed in the your school is about how your peers were dancing in the background, because it made your video enjoyable,funny, and entertaining.I learned in the video,is that you cant drink tap water in Shanghai because you may get sick or you can be in danger if you drink the tap water. In your school, at recess we also have a track, that we play soccer on and basketball too! One question I have about your city is, where does your water sourcecome from? What is in your water source that prevents your city from drinking the tap water? Sincerely, J. (Medford - GC Thread ID 38538507 - Post 151)

✓✓ Hey guys. I really liked your PowerPoint. One of our local canals, Hillsboro Canal, had 120 cars found on the bottom of that canal in 2018. You said that the Thames River used to be very polluted, but now is one of the cleanest rivers in the world. How did they make it clean again? Also, where do the Archimedes get installed or what part of your city? Sincerely, D. (Broward - GC Thread ID 39993783 - Post 639)

✓ Hi, K., I didn’t know that in NewYork you use more water than in other countries. I think like you, we should reduce the number of gallons we use. Bye Bye. L. (Madrid - GC Thread ID 38873171 - Post 309)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 8-AD	DEFINITION Ability to ask questions when encountering different perspectives			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Asking questions to learn more about a peer’s life, place, and/or culture (language, life in the city, school life, how they spend their free time, etc.); Expressing a desire to learn more—and even visit; Asking questions that suggest how someone else’s post gave them a new perspective or new information. Only code questions that indicate a desire to find out more about another person’s life experiences or way of life rather than, for example, technical questions that are purely about the global issue rather than the peer’s life, place, and/or culture. This indicator reflects a broad interpretation of “different perspectives” to include different life experiences rather than just opinions or ways of looking at the world, with an emphasis on showing an ability to ask questions.

Questions about different cultures within one’s school, city, region, country, and world should be coded here and not in 4-AD *Awareness of different cultures within one’s school, city, region, country, and world*. Questions about different perspectives, without acknowledging them as legitimate, should be coded here and not in 25-CU *Recognition of different perspectives as legitimate*. Simply asking questions of others should be coded here and not in 49-GE *Seeking opportunities to communicate with people in other cities and cultures, as well as one’s own* or 51-GE *Gathering and interpreting information from people in one’s own city and culture*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hello Shanghai students, I enjoyed the facts about water in your city. I also liked the acting in some of the clips. **I learned that you can’t drink tap water in your city. In our city, we can drink tap water as it is clean and safe to drink.** We also have a track/field near our school as well. Like your school, our school has a library with lots of books for younger and older students. **I would like to know, if you can’t drink tap water what do you drink from other than water bottles? If you are in class and you don’t have a water bottle, where can you get water to drink?** Sincerely, A. (Medford - GC Thread ID 38538515 - Post 153)

✓✓ Dear peers in Jakarta, Indonesia, Thank you for sharing the video! Our class really enjoyed your presentation in general. It’s so good! Thank you for teaching us that there are many important and beautiful monuments. We love museums, cinemas, theatre... A similarity that our school share is that we all have playground, gym, classrooms, a basketball court, a school field and corridors. **A question we have about your school is: What do you do in the swimming pool? We don’t have swimming pool in our school, so we don’t know what do you do in there.** Sincerely, Your friends in Alcorcón, Madrid. (Madrid - GC Thread ID 38411081 - Post 126)

✓ **CAN YOU TELL ME ABOUT YOUR LIFE IN MASSACHUSETTS** (Jacksonville - GC Thread ID - Post 15)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 9-AD	DEFINITION Ability to identify and critically reflect on bullying behavior online and in-person	DEVELOPMENTAL COMPETENCY AREA Skill		

CODING INSTRUCTIONS

Noticing and naming bullying behavior online and/or sharing instances of noticing and naming bullying behavior in-person; Asking critical questions and/or naming criticisms of online and/or in-person bullying behavior.

Note from Global Cities: Evidence of this indicator is unlikely to be found in Global Scholars discussion boards because identification of and reflection on bullying behavior typically takes place in the physical classroom during the Unit 1 class discussion about internet safety. This discussion takes place before students post in the e-classroom for the first time. Bullying behavior is rarely seen in the discussion boards. Posts exhibiting such behavior are immediately hidden from view, so there are no opportunities for this indicator to be observed during the discussion board analysis unless students are posting about bullying that happened outside of the platform.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ None Found

✓ Hello everyone, my name's J. and here'e my opinion on the survey me and my peers did together. The greatest part about doing the survey was being able to find out what my community wanted to take care of the most. I surveyed my peers, my family, and many more other people in my amazing community. **A challenged we experienced was getting the people to do our survey. Many adults had yelled and said many bad things to my peers, but despite that, they didn't stop no matter what.** The water- related issue that is most important to people in our city is Access to clean water. Clean water is a key factor in our survival as humans and for every other living organism in this world. Clean water is important and should be our top priority in our Earth and Water saving conquest. We would like you feedback on what you think is most important for your community. We want you opinion on what you think we should do in order for us to save our amazing and beautifulplanet. Sincerely, J. (Broward - GC Thread ID 40716840 - Post 895, also an example for 41-GE)

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Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 10-AD	DEFINITION Positive attitude towards one's own culture			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Expressing pride in and/or enthusiasm about one's own culture and/or place. This may include statements about the beauty of where one lives.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Global Scholars! In France, there are lots of water sports. I think that the funnest sports are skiing and swimming. I like skiing because its a very special sport to me. I don't like being cold but the ski equipment is warm so it's ok. There are two types of ski, the "ski de fond" that i think is not very different from ski. When I go to ski I go to l'Alpe d'Huez with my family or I go to Megève with my grandparents. People participate to ski by putting special boots that make you walk like a penguin and connecting them to a ski. Then, you go down a snowy hill and just have fun! (I can't explain it very well but it's funner than it sounds :D) I love swimming beaucouse I love water! My grandpa used to take me or my brother by our ankles (when we were about 3 or something) and dip us in the water and he always said to my mom : -"They will like water when they will grow up!" Im not vey sure it helped but my brother swims in competition and I just swim for pleasure. In short, to swim you kind of wiggle your legs and arms and you swim. From C. (Paris - GC Thread ID 38537128 - Post 232)

✓✓ Hello fellow students my name is T. and I am from New York City. My hobby is to build objects with LEGO because I wish to be an architect in the future as my career. An interesting fact about my city is that there are 722 miles of subway track. A fact about water in my city is that it has one of the most clean water in the world without being filtered. (NYC - GC Thread ID 38182290 - Post 63)

✓✓ My name is O., a boy from Taiwan. I live in Taipei. Taipei is very beautiful. And my favorite hobbyis to reading novel and swimming. Novel is very interesting. (Taipei - GC Thread ID 37951833 - Post 5)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 11-AD Page 1 of 2	DEFINITION Tolerance of differences			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Making explicit reference to differences among people (e.g., in perspectives, experiences, cultures, interests, etc.) with neither positivity nor negativity; Expressing openness to content and/or perspectives shared by another student or responding in respectful ways to differences without expressing explicit positivity (e.g., saying that they can see another students' perspective even if they disagree with it). The lack of explicit positivity toward difference distinguishes this from indicators 12-AD *Responding to differences with openness and positivity, not fear* and 15-AD *Interacting with people of different backgrounds positively and respectfully*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear L., Thank you for sharing your infographic with us. we enjoyed the images you shared in your graph and your easy to follow statistics such as adding the exact percent of participants. You can clearly see how 33% of your participants chose rising sea levels as well as pollution in local waterways. This however, surprised our group due to the fact that we thought we might get similar answers as our countries are both in North America and not too far apart.

I learned that since Miami is close to the ocean most people were concerned about rising sea levels and less people you asked chose access to drinking water and extreme weather. Without this infographic I think that our group would have inferred a different outcome because we thought that we would have similar answers. A similarity in water-related issues in our cities is that we think that the most frequent answers that we received were the answers that fellow members of our communities were the most afraid of. When we surveyed we asked some people why they chose access to clean drinking water and most responses were that they wanted to help stop people going sick from unclean water everywhere, and they didn't want it to reach the point where they could no longer have the privilege to clean water. As you said, most people chose rising sea levels because you are next to the ocean, if sea levels keep rising your city can face consequences. We think that a similarity is that out of the people we chose they picked the answer they knew could impact their lives at some point. A difference is that from the people we surveyed the most frequent answer we got was that most people said that access to clean water was the most important issue to them while you got rising sea levels and pollution in local waterways. I think these similarities and differences exist because of our cities different locations. Miami is very close to the ocean, unlike our city. We have come to a conclusion that the reason for our different answers is because we are farther away from the ocean and we can not see the direct impacts of rising sea levels in our own city. We think that if we resided in a country closer to an ocean we would have more similar answers too. We found that you did not propose a solution for our city, but when looking back at our own infographic we think that some of our solutions may work for your city. One of our solutions that we created was to educate the people around you by doing some research or joining a club or organization. This could help your city because you must first stop climate change in order to fix rising sea levels, if you educate your friends and family about the major harm CO2 is causing to our Earth we think this could be very beneficial to you. A question we have is "have you personally or anyone you know in Miami seen or felt the negative impacts because of the rising sea levels in the ocean or seen any wildlife die due to pollution such as plastic and other forms of garbage." We would like to know this because rising sea levels and pollution in waterways are very important but since Toronto doesn't have lots of wildlife in our lake we don't see the direct impacts first hand unlike some people in Miami. Sincerely, H.,T., J. and E. (Toronto - GC Thread ID 40619931 - Post 950, also an example for 20-CU and 40-GK)

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Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 11-AD Page 2 of 2	DEFINITION Tolerance of differences			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓ Dear classmate, The challenges of being water-wise in your city are different than in my city because we not use water to clean up the streets when it rains we just let the water from the rain dry up. Something (NYC - GC Thread ID 38732665 - Post 335, also an example for 3-AD)

✓ Dear grade 6 students, Thank you for sharing your infographic. It was so detailed and I really enjoyed looking at your graphs. They gave me so much information. One of the things I learned was how my community can help limit storm water. A similarity in our cities is how our communities both rank the water-related issues, but the way our communities want to help prevent the issues. **These differences and similarities exist, because our cities are both dealing with pollution, but we do live in different cities.** Some of the solutions you proposed would work in my city because we do have the option of trying not to use toxic products. Something I would really like to know is have you seen a change in your community? Sincerely, K. (Broward - GC Thread ID 40641869 - Post 879)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 12-AD	DEFINITION Responding to differences with openness and positivity, not fear			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Making explicit, *positive* reference to *differences* among people (e.g., in perspectives, experiences, cultures, interests, etc.); Responding to these differences with inclusive and collaborative language; Expressing an appreciation for diverse perspectives and places; Expressing excitement or enthusiasm for the diverse content and/or perspectives shared by another student. Note that identifying a difference as “interesting” counts as positivity. In addition to the positive content, be alert to and consider stylistic choices (e.g., all caps, emoticons, exclamation points, etc.) that may indicate tone. Any response to another student (e.g., to an existing post) coded here should also be counted as 15-AD *Interacting with people of different backgrounds positively and respectfully*. Positivity does not include very basic politeness like simply saying “Thank you.” Simply observing/naming a difference without expressing interest (or other form of positivity) would be coded as 11-AD *Tolerance of differences*. The key distinction between 11-AD and 12-AD is that 12-AD must show evidence of interest, excitement, or other positivity about the difference.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear Buenos Aires, I truly love all the amazing gardens you have around your school and city. We don't have any gardens outside of our school, so it was really cool to see all the plants, fruits and vegetables you grow. You truly are the “Escuela de naturaleza” the school of nature. I also love the amazing art and murals you have around your school. You have many talented artists! I love the buildings you showed us that are around your city, they are so colorful. You will not find a building like that around our city. Overall, I think you have a truly amazing city and school! -B. (Medford - GC Thread ID 38538533 - Post 155, also an example for 26-CU and 42-GE)

✓✓ Hi M.! I think your city solution is a good idea because with the electric boats there is no risk of an oil spill which protects the water and the animal life but water is a conductor of electricity so it could be putting the crew in danger. Although we chose different solutions, I still think yours is a great idea. One question I have for you is there a different solution that cleans wastewater in your city? Sincerely, M., J., and J. (Medford - GC Thread ID 39642538 - Post 607)

✓ Deer peers, The most interesting thing we learned from our peers in the discussion boards was their cultures and their environmental situations. Foreexample, the way they live and how they speak our common language. Our ideas about life in different cities are that we are all similar in our own way. The digital tool we most enjoyed using during the year was Canva because it helped with the infographic. We will use what we learned in our future lives by spreading awareness about ecological issues. Sincerely, D., R.; R. (Miami - GC Thread ID 41178297 - Post 1168)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 13-AD	DEFINITION Willingness to interact with peers and adults of different backgrounds respectfully	DEVELOPMENTAL COMPETENCY AREA Attitudinal		

CODING INSTRUCTIONS

Articulating a willingness to interact with peers and adults of different backgrounds respectfully, including expressing an interest in hearing more from an online peer, explicitly desiring to learn more from a peer, mentioning the possibility of connecting outside of the Global Scholars platform, or soliciting advice from online peers. The willingness to interact can be about anything, not just topics related to the curriculum. This code does not include simply interacting with peers on the platform respectfully through posting, replying, and questioning, which would be an indirect but not explicit expression of willingness to interact and would include an unhelpfully broad range of interactions. Relative to 12-AD *Responding to differences with openness and positivity, not fear*, this is more about interest in interaction with peers or the process of exchange, not just interest in the content of the post. Also, there does not have to be a discussion of difference as there does in 12-AD. Soliciting the perspectives of others, without acknowledging the perspectives' legitimacy, would be coded here and not in 25-CU *Recognition of different perspectives as legitimate*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

- ✓✓✓ Hello, my name is A. I am from Jacksonville, Florida and I am excited to communicate with you about Global Scholars . Also, to get to know you and about your water sources. Plus, other things about your hometown! (Jacksonville - GC Thread ID 37984387 - Post 16)
- ✓✓ Hi! L., my name is V.you did a good job in reusing paper and plastic. can you see my friend's Y.'s post? because we have same idea and post. We can talk more about it together. V. (Beijing - GC Thread ID 41079890 - Post 1115)
- ✓ hello my name is M., one of the problems of water contamination is that in the sea there is a lot of waste like plastic cans of soft drinks and others... To solve this, one day a week, boats could pick up the dirt that float into the sea, these ships could be electric to be able to work without oil, to no contaminated the sea. what do you think? your friend M. (Barcelona - GC Thread ID 39642538 - Post 606)

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Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 14-AD	DEFINITION Willingness to work collaboratively with peers and adults of different backgrounds to achieve shared goals			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Expressing a willingness to work collaboratively with others (peers or adults) to achieve shared goals. Only code mentions of intentions to work collaboratively where no action has yet been undertaken (actually working collaboratively is captured in 16-AD *Working collaboratively with people of different backgrounds to achieve shared goals*). Any mentions of a willingness to work collaboratively with other individuals or groups on shared goals are included, with the assumption that others inherently have different backgrounds (e.g., different race, ethnicity, religion, socioeconomic status, family composition, etc.). This was a necessary assumption because students almost never stated that the people they were willing to collaborate with to achieve shared goals were of different backgrounds, so very little of their collaborative intentions would have been captured without this assumption. Do not code general statements such as “we should conserve water” because they are too broad to suggest collaboration with others.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Everyone, For our Community action project we are going to work 2 classes together. in order to choose our goal we have made a survey to choose our main concerns related to themain water issues that we have been working in the e-classroom during this year. We want to focus on4 issues:Water clean-up, water conservation, storm water and pastic waste. We belive that all the topics are related and are very important so we want to work with all of them but together. We started las week by working in groups and brainstorming. During this week we have divided the topics and made groups so each group is going to be in charge of one topic. We are going to gather information and each group is going to become an expert in the issue they are working on. Also, inside the group M. (our teacher) gave us a role so now, everyone is in charge of something. The roles are the spokeperson, the writer, the journalist, the time keeper.... Our goal is to inform to our neighbourhood and families about those issues and to find solution that everyone could implement. We want to present our impact by creating models and posters and present them celebratong a “water party” that is something new that we want to do just for this occasion ,in our school playground at the end of this month. We want to invited families and also the rest of students. For the next week groups are going to mix, and as each group will be expert in one issue we are going to share our knowledge. Do you have any suggestions about what could be good and present our ideas in the water party besides the 3d models and the posters? Your friends
(Barcelona - GC Thread ID 41029800 - Post 1032)

✓✓ Dear A., Thank you for sharing your studies with us. You educated me along with my peers about marine debris in your city. We also struggle with the same type of pollution. I hypothesize that pollution in my city will impact your city due to the fact that there is only oh so much drinkable water to go around. So we must keep out precious water clean and safe to drink. To solve marine debris we should further join forces to have a international beach cleanup or street cleanup. In my opinion, city leaders should not make choices that benefit their city but not others because if it hurts us most likely it will loop back around due to the fact that freshwater is limited rather than saltwater. Sincerely, A. (Broward - GC Thread ID 40094639 - Post 703)

✓ Dear R. glad to see that you are passionate about using less water. Maybe you can start by eating one food less of the time or just don't eat a lot of food that uses a lot of water. For a example meat is made up of 75% of water and also bean's are made up of 75% of water. I know it will be a hard choice for me to choose from two. I might start eating less been. Lets take one step at a time....Let the journey begin! (Broward - GC Thread ID 38805935 - Post 275)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 15-AD	DEFINITION Interacting with people of different backgrounds positively and respectfully			DEVELOPMENTAL COMPETENCY AREA Behavior

CODING INSTRUCTIONS

Responding in respectful and positive ways to peers from different places. This should be applied only where there is an interaction between students on the discussion board or when a student mentions having an interaction with someone else outside of the discussion board. An interaction on the discussion boards would be either a reply to a post or a post that references another post/reply. The content of the response may focus on differences (which would also demonstrate 12-AD *Responding to differences with openness and positivity, not fear*) or on commonalities (e.g., shared interests or experiences). This may include encouragement in response to other students' posts as well as signing off posts with "your friend/s" or other similarly positive sign-offs. Note that identifying something as "interesting" counts as positivity. Be alert to and consider stylistic choices (e.g., all caps, emoticons, exclamation points, etc.) in addition to positive and respectful content. Use a broad definition of positivity to be sensitive to cultural differences in how people express positivity. However, positivity does not include very basic politeness like simply saying "Thank you."

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

- ✓✓✓ Hello M., L., and M.!! I liked your post about Aranjuez's water system! My question for you guys is, "What else importantly can you do to help your local water supply in your city?" Good job on your post! I hope to hear from you guys again!! ~K. :))) (Medford - GC Thread ID 39355652 - Post 509)
- ✓✓ I really appreciated the PPT you did together. Really clearly showed some interesting facts I don't know, how the water is leaking and how to repair it, most importantly how to conserve it. I would like to share a documentary I think worth watching: cowspiracy the sustainability secret It shows how stock farming impacts the environment. But maybe a few facts in it may be exaggerated. (Taipei - GC Thread ID 39021773 - Post 356)
- ✓ nice. what kind of food do you have in you country? (Jacksonville - GC Thread ID 37951833 - Post 7)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 16-AD	DEFINITION Working collaboratively with people of different backgrounds to achieve shared goals			DEVELOPMENTAL COMPETENCY AREA Behavior

CODING INSTRUCTIONS

Describing actions one has taken or is taking to work collaboratively with students or others in one’s community toward specific goals. Reporting on actions such as collaboration on a final project, additional projects or organizations they may have become involved with, or actively seeking other students’ input or advice on actions—for example, “Please give us your advice on ways we can help our community.” As with 14-AD *Willingness to work collaboratively with peers and adults of different backgrounds to achieve shared goals*, the assumption is that others inherently have different backgrounds, so any mention of collaborative work toward shared goals is included. This was a necessary assumption because students almost never stated that the people they were collaborating with to achieve shared goals were of different backgrounds, so very little of their collaborative work would have been captured without this assumption.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi everyone, For our field research, a large group of us stayed after school on several occasions and conducted a water audit through our building. We have four floors in the school and broke it down by floors. We checked all the bathrooms & sinks & toilets, we also checked all the water fountains. We took pictures and videos of some of the issues we found. We found the water meter and checked it 3 times to figure out how much water we use in a week. We created a Google slide presentation. Link: <https://docs.google.com/presentation/> The most important thing we learned is that we are not wasting that much water. The problems that we found can be fixed and we can become more water-wise. We found 15 water issues. We created a form that will be used to track the problems until they are fixed. We have approximately 1400 people who use our facility daily. We made some posters and put them up around school to educate our school community on conserving water and becoming water-wise. We understand it is a group effort and when we work together it makes a difference. We hope you enjoy our slide show and learn from it. We learned a great deal and have changed some of our habits in order to be water-wise. Thanks, Ambassadors Grade 6 (Everett - GC Thread ID 39021773 - Post 355, also an example for 45-GE)

✓✓ The goal of our project was to clean the Biscayne bay area. Some of the challenges we faced were The extreme heat and the little animals that lived there. Some things we accomplished were making others schools participate in the action, as well as making it a cleaner and safer place. (Miami - GC Thread ID 40810103 - Post 1088)

✓ Hi everyone, Something that surprised me in the videos was that there are no to much containers to recycle. I am from Barcelona, Spain, and one type of pollution I see in my city is the trash on our city. I think one effect pollution has on my city is that it makes the city and sea very dirty. We ask for more recycle containers in our city so will be easy for people to reecycle, sometime they are far away from our home and because of that we don’t recycle. Sincerely, I. (Barcelona - GC Thread ID 40202949 - Post 769)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR	DEFINITION			DEVELOPMENTAL COMPETENCY AREA
17-AD	Intervening against intolerant behavior online and in-person			Behavior

CODING INSTRUCTIONS

Actively intervening against intolerant behavior online (e.g., challenging a peer who has posted an offensive or harmful comment); Describing ways in which one intervenes against intolerant behavior online and/or in-person.

Note from Global Cities: Evidence of this indicator is unlikely to be found in the discussion board analysis because intolerant posts (and as a consequence, any posts addressing or intervening against the intolerance) are hidden by the Global Cities staff to keep the e-classroom a safe space for students.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found
✓✓ None Found
✓ None Found

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 18-CU	DEFINITION Understanding how one’s life and the lives of others are influenced by broader cultural and historical contexts			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Explaining or describing how or why actions taken in the past influence the way people are living or why things are as they are in the world today. This could involve recognizing the ways in which cultural and/or historical components make up one’s own identity and/or those of one’s peers. Do not code if simply providing a history of an event or a celebration; the event must be explained as an historical or cultural context or influence for how people live today.

To distinguish between “awareness” (1-AD *Awareness of how one’s life and the lives of others are influenced by broader cultural and historical contexts*) versus “understanding” (18-CU), in 1-AD awareness would be demonstrated by mentioning a connection between one’s life and the culture/historical context. In 18-CU, understanding is demonstrated by going a step further and explaining how or why that connection exists.

During the creation and testing of the codebook, 18-CU and 1-AD were treated as mutually exclusive to delineate “awareness” and “understanding.” All excerpts of posts and replies coded as evidence of 18-CU were therefore not coded as evidence for 1-AD. Future applications of the codebook may code these two indicators independently or double code “understanding” as implicit evidence of “awareness.”

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi globals Scholars i would like to tell you about a water activity in my culture called water festival of villagrac&i’a the story of how this activity began is the party was spontaeously born in the sumer of 1989.Once moved to San Roque to his chapel,the pilgrims who had loaded with the Holy for the city,ended up exhausted and began to ask for water to the request of the pilgrim was taken as a joke, but suddenly a person threw a glass of water from the top of bulding #15 on San Roque street above the bar “El peñon”. People partcipe by people participate as a tradition of San Roque. One fact you may find interesting is that started as a joke ,when a neighbor therew a glass of water at the ex- pilgrims,each year it increased when the excited neighbors therw buckets of water at the people and the pilgrims. Your friend,P. and O. (Barcelona - GC Thread ID 38732668 - Post 248)

✓✓ Ok, so water is a major factor in my culture. In the country that I came from (which is Afghanistan), if you have the normal amount of water that you have in America, you are considered rich and extremely lucky. I know, it sounds surprising. But there are multiple ways to get water in Afghanistan, but it isn’t really a walk in the park either. There are variants waterfalls and water wells in Afghanistan, but most of the time they are multiple miles away from Afghanis houses, or it’s just in the middle of nowhere. [...] (NYC - GC Thread ID 38633587 - Post 216, also an example for 33-GK)

✓ Hi global scholars I would tell you about a water celebretion in my culture called l’ou com balla the celebration began at 1440 but no one knows exactly how it began people participate by how one egg is put on a water fountain and never falls one fact you may find interesting is that the celebration is a tradicional activity from El Corpus a religious festivity your friend A. (Barcelona - GC Thread ID 38656050 - Post 189)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 19-CU	DEFINITION Understanding of one's culture (behaviors, identity, beliefs)	DEVELOPMENTAL COMPETENCY AREA Knowledge		

CODING INSTRUCTIONS

Explicitly defining one's culture by explaining cultural aspects (behavior, identity, beliefs); Expressing nuanced beliefs/opinions about one's own culture (positive and critical within the same post—e.g., noting both valuable customs as well as issues in one's city); Differentiating between what is and/or what is not one's own "culture." To distinguish "awareness" as in 2-AD *Awareness of one's culture (behaviors, identity, beliefs)* from "understanding" (19-CU), naming a tradition would fall under 2-AD; explaining the reason or meaning behind a tradition or how it affects people's lives would be 19-CU.

During the creation and testing of the codebook, 19-CU and 2-AD were treated as mutually exclusive to delineate "awareness" and "understanding." All excerpts of posts and replies coded as evidence of 19-CU were therefore not coded as evidence for 2-AD. Future applications of the codebook may code these two indicators independently or double code "understanding" as implicit evidence of "awareness."

Note from Global Cities: "We waste a lot of water" could be tagged with 2-AD. The "we" shows awareness that culture is a group phenomenon, and the "waste a lot of water" is an action that reflects group norms or customs related to water use. If the student explained why they waste a lot of water or provided additional details, then the post could be tagged with 19-CU.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ In my religion, we mainly use water for baptisms. This is done when we are babies, showing we are ready to be a true Christian. The water is there because when it is poured on the baby, it shows he or she has washed away all of their sins. In my cousin's church there is holy water that is placed all around the church and you can wet your finger in there and make the sign of the cross on your forehead. One last thing I know we use water for is after receiving the Holy Eucharist (body of Christ). The water is representing the wine (the blood of Christ). This is how we use water in my religion; This is a very important sacrament. Christianity. (NYC - GC Thread ID 38633921 - Post 217)

✓✓ Dear friend. It is about dragon boat festival. It is 5/5 in Chinese lunar calendar. The old story about Qu Yuan in the Chu Dynasty. The bad guy wanted to take him in to the jail, then he suicided in the river. Then people took the dragon boat wanted to find his body. So it is the origin of the dragon boat festival. Because i am a kid, i can't participate the game. but i saw the game on the TV. I know the Songkran Festival in Thailand. Your friend, M. (Taipei - GC Thread ID 38536042 - Post 207)

✓ Dear M. and M., Thank you for sharing. I learned from you that climate change make your sea level rise. A similarity between how climate change impacts our cities is climate change kills our fish too. I do not think that members of my community are concerned about climate change because they don't do anything. From the survey, I hope to learn how i can survey people . Sincerely, B.,J. (NYC - GC Thread ID 40376283 - Post 796)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 20-CU Page 1 of 2	DEFINITION Understanding of one's city and how it relates to other cities around the world		DEVELOPMENTAL COMPETENCY AREA Knowledge	

CODING INSTRUCTIONS

Explaining *explicit* connections and comparisons between another student's lived experience in their city and one's own (e.g., my water waste versus yours; city features; climate differences; varying amounts of green space, etc.); Naming similarities and/or differences between culture, technology, local environment, environmental issues, etc. (e.g., noting connections between cultural values like wastefulness, appreciation of nature, etc.). The two cities examined can be in the same country or different countries, but the comparison city must be identified or implied. Do not code comparing their own city to the world as a whole. There must be some sort of explanation of "why" there is a similarity or difference to trigger 20-CU rather than simply naming a similarity or difference, which would result in coding for 3-AD *Awareness of one's city and how it relates to other cities around the world.*

During the creation and testing of the codebook, 20-CU and 3-AD were treated as mutually exclusive to delineate "awareness" and "understanding." All excerpts of posts and replies coded as evidence of 20-CU were therefore not coded as evidence for 3-AD. Future applications of the codebook may code these two indicators independently or double code "understanding" as implicit evidence of "awareness."

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear L., Thank you for sharing your infographic with us. we enjoyed the images you shared in your graph and your easy to follow statistics such as adding the exact percent of participants. **You can clearly see how 33% of your participants chose rising sea levels as well as pollution in local waterways.** This however, surprised our group due to the fact that we thought we might get similar answers as our countries are both in North America and not too far apart.

I learned that since Miami is close to the ocean most people were concerned about rising sea levels and less people you asked chose access to drinking water and extreme weather. Without this infographic I think that our group would have inferred a different outcome because we thought that we would have similar answers.

A similarity in water-related issues in our cities is that we think that the most frequent answers that we received were the answers that fellow members of our communities were the most afraid of. When we surveyed we asked some people why they chose access to clean drinking water and most responses were that they wanted to help stop people going sick from unclean water everywhere, and they didn't want it to reach the point where they could no longer have the privilege to clean water. As you said, most people chose rising sea levels because you are next to the ocean, if sea levels keep rising your city can face consequences. We think that a similarity is that out of the people we chose they picked the answer they knew could impact their lives at some point.

A difference is that from the people we surveyed the most frequent answer we got was that most people said that access to clean water was the most important issue to them while you got rising sea levels and pollution in local waterways. I think these similarities and differences exist because of our cities different locations. Miami is very close to the ocean, unlike our city. We have come to a conclusion that the reason for our different answers is because we are farther away from the ocean and we can not see the direct impacts of rising sea levels in our own city. We think that if we resided in a country closer to an ocean we would have more similar answers too.

We found that you did not propose a solution for our city, but when looking back at our own infographic we think that some of our solutions may work for your city. One of our solutions that we created was to educate the people around you by doing some research or joining a club or organization. This could help your city because you must first stop climate change in order to fix rising sea levels, if you educate your friends and family about the major harm CO2 is causing to our Earth we think this could be very beneficial to you.

A question we have is "have you personally or anyone you know in Miami seen or felt the negative impacts because of the rising sea levels in the ocean or seen any wildlife die due to pollution such as plastic and other forms of garbage." We would like to know this because rising sea levels and pollution in waterways are very important but since Toronto doesn't have lots of wildlife in our lake we don't see the direct impacts first hand unlike some people in Miami. Sincerely, H.,T., J.and E. (Toronto - GC Thread ID 40619931 - Post 950, also an example for 20-CU and 40-GK)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 20-CU Page 2 of 2	DEFINITION Understanding of one's city and how it relates to other cities around the world			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓ Dear S., Thank you for teaching me about the water system in London. The water system in my city is similar because our water comes from freshwater near our cities. However, our systems are different because you get the water from your rivers and I get it on the reservoirs. I think geography affects our water systems because where I live there are mountains that rains and snow a lot and we have access to the water. Something I learned from your post that I can use in my city it's that we can reuse the water. Sincerely, I. (Madrid - GC Thread ID 39361522 - Post 481)

✓ Dear, A. thanks for teaching me about your water system in Aranjuez. our water systems are the same because the come from far away sources but you get your water from a different source. geography affects my water system because we are below sea level which causes us to no have wells or basements. i learned that you get your water source from the Tajo river. (Miami - GC Thread ID 39459818 - Post 523)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 21-CU	DEFINITION Understanding of different cultures within one’s school, city, region, country, and world	DEVELOPMENTAL COMPETENCY AREA Knowledge		

CODING INSTRUCTIONS

Analyzing different cultures within one’s school, city, region, country, and/or world. Explaining connections, similarities, and/or differences between different cultures within one’s school, city, region, country, and/or world. Do not include explanations of personal interests (e.g., video games) unless they state explicitly that the interest reflects a cultural practice among a particular group of people (e.g., teenagers). To distinguish “awareness” (4-AD *Awareness of different cultures within one’s school, city, region, country, and world*) from “understanding” (21-CU), code as 21-CU if the student acknowledges multiple cultures and explains aspects of one or more of those cultures; if the student merely names the presence of different cultures, code as 4-AD.

During the creation and testing of the codebook, 21-CU and 4-AD were treated as mutually exclusive to delineate “awareness” and “understanding.” All excerpts of posts and replies coded as evidence of 21-CU were therefore not coded as evidence for 4-AD. Future applications of the codebook may code these two indicators independently or double code “understanding” as implicit evidence of “awareness.”

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi C., I love the anime you have recommended! Thank You! In my city there is no actual traditional food, but there is a ton of people who are Hispanic that have brought their traditional foods, one of which is called, Medianoche. It is a Cuban sandwich that is, in my opinion, amazing. What type of food is there were you live? Sincerely, Y. (Miami - GC Thread ID 37955049 - Post 61)

✓✓ Hi I.! Thank you for sharing about your culture! One thing I found interesting is that little girls and boys have water fight on Easter Monday. On Easter Monday my family and I find Easter eggs. Most Easter eggs are filled with candy, and treats. These are not real eggs. They are made of plastic, and very colorful. Can you tell me another holiday that has to do with water? Sincerely, T. (Medford - GC Thread ID 38704173 - Post 227)

✓ I learned that in your country tourist come to visit your landmark, Sargrada Familia cathedral. We both have beaches around us, however in the U.S. 13 year old students are in middle school or secondary not in in high school. Does your school start in 8th grade? Another thing we have in common is that in school we have swimming teams and yes they have pools indoor and outdoor. I enjoyed your video and I saw that Barcelona and Miami have a lot in common but also a lot of differences. Your Friend, D. and M. (Miami - GC Thread ID 38434988 - Post 130)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 22-CU	DEFINITION Understanding that problems may be solved differently depending on cultural factors	DEVELOPMENTAL COMPETENCY AREA Knowledge		

CODING INSTRUCTIONS

Naming or explaining how cultural differences affect approaches to problem solving (beyond just recognizing different cultural viewpoints); Acknowledging or explaining how one can use information, opinions, and contexts derived from cultural learning to understand different perspectives on problems and develop solutions. Students do not need to explain their understanding to achieve this indicator; naming or acknowledging is sufficient demonstration of cultural awareness. Code mentions of differences related to culture; do not code mentions of differences in socioeconomic status, natural resources, government policy, and/or political differences, which are captured in 34-GK *Understanding that problems may be solved differently depending on socioeconomic status, natural resources, government policy, and political differences.*

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ We found that you did not propose a solution for our city, but when looking back at our own infographic we think that some of our solutions may work for your city. One of our solutions that we created was to educate the people around you by doing some research or joining a club or organization. This could help your city because you must first stop climate change in order to fix rising sea levels, if you educate your friends and family about the major harm C02 is causing to our Earth we think this could be very beneficial to you. A question we have is “have you personally or anyone you know in Miami seen or felt the negative impacts because of the rising sea levels in the ocean or seen any wildlife die due to pollution such as plastic and other forms of garbage.’ We would like to know this because rising sea levels and pollution in waterways are very important but since Toronto doesn’t have lots of wildlife in our lake we don’t see the direct impacts first hand unlike some people in Miami. Sincerely, H.,T. J. and E. (Toronto - GC Thread ID 40619931 - Post 950, also an example for 11-AD and 40-GK)

✓✓ Dear, peers! The solution we think is most helpful for our city is telling people to economize, save water and don’t waste water, because most people in our city don’t worry about consequence. Some solutions that are already used in our city are smart water and clean dirty water to clean water. The solutions reflect our local culture and geography because people are different, we have different cultures. Some people economize water, some people don’t. Sincerely, A. (Astana - GC Thread ID 39664177 - GC Provided)

✓ There are different ways to solve issues and problems in our community and world. It made me see that their lives are really similar to mines in many ways. Like how we play the same games and the same activities. We used vennage and powerpoint this year. And it is useful since it helped me branch and learn with people across the world and solve problems today. Sincerely, J. (Miami - GC Thread ID 41151341 - Post 1202)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 23-CU Page 1 of 2	DEFINITION Ability to adapt language and content of writing to meet the needs of diverse audiences			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

1. Providing translations for words (often in parentheses or brackets)	✓	My favorite traditional food is Puranpoli (an Indian sweet flat bread) and Pav Bhaji (a spice street food) . (Barcelona - GC Thread ID 37897460 - GC Provided)
	✓	[...] The water is then transported in a network of pipes traveling up to 4,600 miles (about 7,403 kilometers) [...] (Jacksonville - GC Thread ID 39320287 - Post 460, also an example for 35-GK)
2. Explaining the meaning of words or phrases	✓	Hello i'm S.Last Friday, a water studies doctor (that research water resources) came to our school. To teach us about water problems in Taiwan.I will explain some of it. [...] (Taipei - GC Thread ID 39211989 - Post 444)
	✓✓	We're also going to clean up the river and put placards on top of the storm drains. The placards are signs that tell people not to dump anything down the storm drains. (Medford - GC Thread ID 40980469 - Post 1002)
3. Making a comparison between something that is likely unfamiliar and something they think others will be familiar with (e.g., "it is kind of like...")	✓	To give you an idea its kind of like London but instead of green fields, it's sand. (AbuDhabi - GC Thread ID 37895367 - GC Provided)
	✓✓✓	Dear Global Scholars, I have researched climate change in South Florida along with my fellow classmates. During our research, we came across a very interesting article called "Federal report says what Florida already knows— climate change is affecting us now" by Alex Harris. This article is about how South Florida's climate is negatively changing because of global warming. Yes, the environment will suffer, but that isn't all. According to the article, "climate change is already impacting Americans, and if nothing is done it will devastate the economy and disrupt millions of lives". This article opened our eyes about how now, in recent years, is when people are finally realizing and acting on climate change. Even my peers have seen recent changes in our surrounding areas. We have talked about newsletters, articles, news segments and more concerning this topic that we have seen ourselves. Not-So-Surprisingly, I was shocked and in slight disbelief by the information in this article. This is sadly my area that they are talking about, my area that could disappear in a few decades. It is almost something that sounds impossible to even happen, which is why I'm in slight disbelief. The concept of climate change is well-explained and I fully understand the subject. Maybe it would be easier to understand for others if terms such as, "extreme or high vulnerability to sea level rise" or "carbon emissions". Possibly explaining terms or narrowing down their meaning could help others interpret the true meaning and effects of climate change. Sincerely, L. (Miami - GC Provided)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 23-CU Page 2 of 2	DEFINITION Ability to adapt language and content of writing to meet the needs of diverse audiences			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

4. Attempting to explain or describe in words something another person has never experienced before or would likely be unfamiliar with	✓ Unfortunately snow is something you do not want to touch! It is cold, wet, and really annoying if you need to get somewhere. (Buffalo - GC Thread ID 37997760 - GC Provided) ✓✓ Some interesting facts about Miami is that the Everglades, a park that also serves as a animal conservation center which is a home to many creatures, is the only place on earth where both crocodiles and alligators coexist. The water was safe until recently where large amounts of red algae started taking over the area, killing many of our sea creatures. I would like to know if there have been any water concerns in your city? (Miami - GC Thread ID 38130879 - Post 83, also an example for 28-GK)
5. Reporting adapting language or content as part of engaging with different audiences through any medium, including translation	✓ One of the difficulties we had was translate the questions. (Barcelona - GC Thread ID 40646880 - GC Provided) ✓✓ Hi international peers, my group and I would like to inform you about our progress so far regarding the community action project. We have decided to create an educational and interactive website about climate change and pollution. We have choose to target little kids because we feel that they need to be informed. So far we have found most of our games, videos and images. We have typed up all our information and now we are just adding the finishing touches. We have worked very productively as a group with some people working on assembling the website, some people gathering research and some gathering videos and games. We have struggled with finding interactive and fun videos that will involve kids. [...] (Medford - GC Thread ID 41085916 - Post 1100)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 24-CU	DEFINITION Ability to recognize different perspectives on specific global issues			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Naming different perspectives about a specific global issue; Describing what makes those perspectives different. This code includes any acknowledgement that not everyone will hold the same opinion or care about the same issues (e.g., “I do not think that a large percentage of members in my community are concerned about transportation issues”). This indicator pertains to different perspectives on a global issue and not just different solutions. Do code if the student says the solutions stem from different perspectives or opinions about the issue.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article ‘Bill De Blasio Seeks to Flood Proof Lower Manhattan by Adding Land’ by Bloomberg News. In NYC, we face a problem from climate change that causes our sea levels to rise, and may soon potentially flood our city’s land. To counteract this, recently, our Mayor De Blasio proposed a \$10 billion plan to create a seawall on lower side Manhattan, so the rising sea level will have trouble to flood NYC. Although this idea looks very positive, many people have disagreed with the plan. One example is that our U.S. president, Donald Trump, is skeptical about the causes of the climate change (carbon emissions, depleting ozone layer, etc.). In our opinion, Donald Trump’s thoughts are very negative towards the progression of the sea wall project. A second example is that Tim Dillingham, an executive director at the American Littoral Society was concerned that marine life can get harmed during the project. In our opinion, Tim creates a good point, because such a large project can truly negatively impact the animals the the NYC ecosystem. Finally, a third opinion is that Roland Lewis, the president of the 52 Waterfront Alliance says that the project may not be very beneficial financially, since \$10 billion is a large amount of the budget with a minimal benefit in the interest of money. In our opinion, we agree with this idea. It is because since this wall doesn’t cover all of NYC, there may be more damage costs (of damaged infrastructure). A question we have about these opinions is what influences Donald Trump’s skepticism on the causes of climate change? Sincerely, D. and A. is a 3D generated image to represent what NYC would look like if the sea levels had risen more. (This is not a real picture, just a prediction based drawing). (NYC - GC Thread ID 40558331 - Post 838, also an example for 25-CU, 30-GK, and 37-GK)

✓✓ Dear S. Thank you for sharing your infographic. I enjoyed your presentation very much.I learned that the people around you disregard extreme weather. A similarity in water-related issues in our city is that most people voted for pollution in local waterways. A difference is I got one person for extreme weather. I think these similarities and differences exist because not everyone disregards extreme weather. The solutions you proposed would not work in my city because New York City is very cold compared to Florida. A question I have is what are you doing to help your local waterways? Sincerely, S. (Broward - GC Thread ID 40603632 - Post 874)

✓ 5. One of the difficulties we had was translate the questions. (Barcelona - GC Thread ID 40646880 - GC Provided)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 25-CU Page 1 of 2	DEFINITION Recognition of different perspectives as legitimate			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Naming and acknowledging different perspectives that exist in the world, such as in their community, in the media, or among experts. “Legitimate” in this case means different perspectives are seen as valid, fair, reasonable, supported by tradition, custom, or standard. The perspectives should be specific; do not code general statements such as “people don’t care about extreme weather.” Note that the different perspectives do not need to be about a global issue. This does not apply to students’ asking questions or soliciting the opinions or perspectives of their peers, which are captured elsewhere (e.g., 8-AD *Ability to ask questions when encountering different perspectives*, 13-AD *Willingness to interact with peers and adults of different backgrounds respectfully*, and 42-GE *Interest in the larger world, particularly unfamiliar people and places*), unless they also explicitly identify those perspectives as being legitimate.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article ‘Bill De Blasio Seeks to Flood Proof Lower Manhattan by Adding Land’ by Bloomberg News. In NYC, we face a problem from climate change that causes our sea levels to rise, and may soon potentially flood our city’s land. To counteract this, recently, our Mayor De Blasio proposed a \$10 billion plan to create a seawall on lower side Manhattan, so the rising sea level will have trouble to flood NYC. Although this idea looks very positive, many people have disagreed with the plan. One example is that our U.S. president, Donald Trump, is skeptical about the causes of the climate change (carbon emissions, depleting ozone layer, etc.). In our opinion, Donald Trump’s thoughts are very negative towards the progression of the sea wall project. A second example is that Tim Dillingham, an executive director at the American Littoral Society was concerned that marine life can get harmed during the project. In our opinion, Tim creates a good point, because such a large project can truly negatively impact the animals the the NYC ecosystem. Finally, a third opinion is that Roland Lewis, the president of the 52 Waterfront Alliance says that the project may not be very beneficial financially, since \$10 billion is a large amount of the budget with a minimal benefit in the interest of money. In our opinion, we agree with this idea. It is because since this wall doesn’t cover all of NYC, there may be more damage costs (of damaged infrastructure). A question we have about these opinions is what influences Donald Trump’s skepticism on the causes of climate change? Sincerely, D. and A. is a 3D generated image to represent what NYC would look like if the sea levels had risen more. (This is not a real picture, just a prediction based drawing). (NYC - GC Thread ID 40558331 - Post 838, also an example for 24-CU, 30-GK, and 37-GK)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 25-CU Page 2 of 2	DEFINITION Recognition of different perspectives as legitimate			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓ Dear A., Thank you for sharing your info graphic. I enjoyed reading your graphs that informed me about what the majority of your community thought was the most important water related issue and the best solutions to them. I learned that your community thought that pollution in local waterways was the most important water related issue that needs to be solved and the best solution was to change your behavior. You also taught me about storm waters and ways to limit storm water from happening. A similarity in water-related issues in our cities is storm water. Storm water is one of the most serious threat to the health of Florida's groundwater, just like yours. A difference is citizens in your community thought that changing your behavior was the best solution to water-related issues. But the citizens in my city thought that the best solution to water related issues is to teach others about the problems. I think these similarities and differences exist because we do live in the same country, therefore a lot of the ideas you suggested would well for us to, but there are also differences because we are located on opposite sides of the country so some of the ideas you proposed would work better for your community than ours. The solutions you proposed would work in my city, because your solutions were to limit storm water, which is one of the biggest way our groundwater is polluted. Sincerely, S. (Broward - GC Thread ID 40641869 - Post 877)

✓ Dear Peers and Teachers, During this semester, we shared various ideas from different viewpoints, and that opened up a new perspective that I observe and evaluate information in detail. I'm grateful that there is a chance to cooperate and discuss the situation, problem, solution, and of course to exchange our ideas. It's also a chance to learn from international peers on the internet (a new experience). Thanks too all the work others has done to create this opportunity for us to learn. Finally, I want to say : A small seedling can make a big difference, can you be that seed ? You can, You must, and You will (change the world) Be the change you want to see..... P.S. I just finished watching " Wonders of the Universe ", quite interesting... " We are a brief flourish of light in the long dark story of the universe. " Best Wishes and Good Luck Sincerely, K. 2019,5,24 (Taipei - GC Thread ID 41119899 - Post 1164, also an example for 40-GK)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 26-CU	DEFINITION Positive attitude towards other cultures			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Expressing positive attitudes towards other cultures at any point (including in an initial discussion board post or in responding to the post of another student). This includes a positive, warm, or interested response to another student sharing facets of their culture. It does not include giving a warm, positive, or interested response to a student's post that is not related to culture (e.g., physical characteristics of a city or an individual student's personal interest). Making a positive general comment about another city would be coded here.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear Buenos Aires, I truly love all the amazing gardens you have around your school and city. We don't have any gardens outside of our school, so it was really cool to see all the plants, fruits and vegetables you grow. You truly are the "Escuela de naturaleza" the school of nature. I also love the amazing art and murals you have around your school. You have many talented artists! I love the buildings you showed us that are around your city, they are so colorful. You will not find a building like that around our city. Overall, I think you have a truly amazing city and school! -B. (Medford - GC Thread ID 38538533 - Post 155, also an example for 12-AD and 42-GE)

✓✓ Hi fellow peers, I really enjoyed your video mostly because you showed lots of pictures of historical monuments around you and also shared lots of information about them and I learned a lot about them. I learned that your school was founded in 1994 and was named after a saint. I also learned that your city is the city capital of your country and that you are surrounded by lots of historical monuments. One thing I found similar about each other is that we also have lots of beautiful things in our city like our parks and beaches. One thing I found unfamiliar is that they have lots of other rooms and other stuff in their schools like swimming pools, and other unfamiliar rooms. I would like to learn more about your traditions and beliefs, about your city, and about other monuments you might have. Thank you for the video. From, J. in Miami. (Miami - GC Thread ID 38435287 - Post 132)

✓ Hello P. I am E. and your city is very nice, and i have tried Fortnite once (Everett - GC Thread ID 38015245 - Post 28)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 27-GK	DEFINITION Knowledge of local and world geography			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Sharing facts and information about and/or showing one's understanding of local and world geography; Naming new learning about local and world geography. Note that geography only includes natural, physical features (lakes, rivers, islands, etc.) and national/international geography (states, capitals, borders, etc.); it does not include local infrastructure or cultural markers. Code geographic facts even if they do not show an awareness of student's relative place (e.g., "We get our water from the Wanaque Reservoir.")

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi! Your information is very interesting! And now I want to tell you about my local waterway. My local waterway is river Ishim. The river originates in the low mountain massif Niyaz of the Kazakh Upland and flows for 775 km to the north-west. The river freezes in early November, opens in April - May. In the summer, you can swim on ishim, and when it freezes in winter, you can skate. The cities of Astana, Esil, Derzhavinsk, Sergeevka and Petropavlovsk are located on the territory of Kazakhstan on Ishim, and the city of Ishim is on the territory of Russia. That's all. Thank you! Goodbye! (Astana - GC Thread ID 39832502 - Post 633)

✓✓ Hi L.! My name is I. and I was wondering, how close are you to the Zhuoshui River? I live in Coconut Creek, FL and although we don't have many popular rivers, we have a swamp called the Everglades where many of Florida's alligators live. (Broward - GC Thread ID 37953010 - Post 11)

✓ Dear J., The solution we thought helping with community clean ups were the best solution because it helps our community be clean and we basically clean up objects that can affect our healthy environment. The geography and culture influenced our decision because many lakes in our city are being trashed and polluted which can affect our drinking water supply. A question we have about your solution is where specifically on the rooftop did you plant your plants an what plants are you using. The reason we throw trash in the trash can in our city because if we don't do it, we can be fined or arrested. Sincerely D. (Broward - GC Thread ID 39535611 - Post 536)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 28-GK	DEFINITION Knowledge of global issues and their local impact			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Acknowledging connections between global issues and their local impacts; Conversely, noting the ways in which local behaviors affect global issues. Local impacts could be ones that affect students' cities, neighborhoods, families, or schools. Students do not need to make explicit statements to show that they understand the connection between global issues and their local impact; the indicator should still be applied if there is an implicit connection. The post need not show an understanding of causal relationships (e.g., "because of X, Y happened"), but it should demonstrate (if only implicitly) that the student understands that some change is happening globally, whether or not there is evidence of it locally.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article World Wild Life in World Wild Life publication. The article taught us that climate change impacts our city by climate change can make sea levels rise and oceans are becoming warmer. Longer and more intense droughts threaten crops, wildlife and freshwater supplies. To address this crisis we must reduce carbon pollution or/and prepare for the consequences of global warming Another impact of climate change in our city that we have observed is fish being killed in the ocean because of warmer climates and warmer climates creates algae which can harm fish. A question we have is how does climate change affect your city and animals? Sincerely, M. and M. (NYC - GC Thread ID 40376283 - Post 794)

✓✓ Dear friends, Our idea is that to reduce pollution the boats and the ships needs to be very careful and they need to pass revision to see if they are functioning properly. In Galicia (Spain) some tiem ago one big ship polluted our seas with petrol. Is important to prevent that, Your friends, M. and I. (Barcelona - GC Thread ID 39692279 - Post 611)

✓ Hello, my name is Z. and I am currently living in Miami, Florida. My favorite activities are Being alone, going on my electronics (phone; Ps4), and hanging with my friends. I like being alone because then I can think over my actions with other people in peace. I like going on electronics because it distracts me and I dont have to think, and I like hanging with friends because they prove as greatemotional support and I can tolerate them. Some insteresting facts about Miami is that the Everglades, a park that also serves as a animal conservation center which is a home to many creatures, is the only place on earth where both crocodiles and alligators coexist. The water was safe until recently where large amounts of red algae started taking over the area, killing many of our sea creatures. I would like to know if there have been any water concerns in your city? (Miami - GC Thread ID 38130879 - Post 83, also an example for 23-CU)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 29-GK	DEFINITION Knowledge of economics and politics and their impact		DEVELOPMENTAL COMPETENCY AREA Knowledge	

CODING INSTRUCTIONS

Sharing information about and showing understanding of economics and/or politics and their impact. Code if the student references their city’s municipal service providers (e.g., local water or electricity supplier), since it shows the student has some understanding that their city government has suppliers for the services it provides to residents.

Posts will be double coded as 29-GK and 30-GK *Knowledge of one’s city government and differences between city governments around the world* when referring to local, city-level policies (e.g., “The mayor of my city approves new city laws”). References to broader level policies or economic forces will not be double coded with 30-GK. Do not code if the student simply mentions something about local infrastructure (e.g., a museum or casino) without acknowledging its political or economic origins or impact. Do not code if the student simply provides isolated facts about a city (e.g., “our state capital is Albany”) without connecting those facts to politics or economics.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article ‘Climate Change’s Giant Impact on the Economy:4 Key Issues’ in The New York Times. This article showed us 4 ways that climate change impacted our economy. For instance, 1 key issue that the article talks about is how permanent the costs would be. The article taught us that climate change impacts our city by causing floods that hurt our economy. The floods cause damage to the roads and to fix those damages, you need a lot of money. Our reaction to this was that we were worried that the small towns might not have enough money to fix the problems that the flooding caused. Another impact of climate change in our city that we have observed is that an area once fertilized was experiencing a drought causing the crop yields to decrease. Our reaction to this was that we were worried that people would die because of the shortage in food there. One question we have is that how does pollution affect climate change. Sincerely, D. and C. (NYC - GC Thread ID 40559538 - Post 845)

✓✓ We analyzed the news article ‘ My New Plan To Climate - Proof Lower Manhattan ‘ from Intelligencer. The article had taught us about sea level rise and how we must stop it. The main idea is about how the Mayor is going to prevent sea level rising. According to the article, under the Mayors’ new plan he is going to spend \$ 10 billion to stop sea level rise by building a wall. It also states, Hurricane Sandy put 51 square miles of Manhattan underwater. Will the wall be strong enough and how are we going to raise the money for it? We are happy that the Mayor had start doing something for this serious problem. Sea level rise must be a huge topic because it does lots of damage to the environment. Without the wall floods will cause more destruction. I am worried about the future of climate change it is a real big topic we must worry about. We should stop climate change. K. and M. (NYC - GC Thread ID 40558858 - Post 840)

✓ Dear peers, we were surprised by our water footprint because it shows that we use too much daily. we think the challenges in being water wise are constantly reminding yourself and your friends and family not to waste water. We are going to try to take short showers and also we want to write a letter to our city council to let them know that if rains they don’t need to clean the streets by using more water Sincerely, E. and J. (Barcelona - GC Thread ID 38732665 - Post 334)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 30-GK	DEFINITION Knowledge of one's city government and differences between city governments around the world			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Sharing information about and showing one's understanding of the structure and workings of one's own city government; Making comparative statements about other city governments. Code if the student references their city's local trash collection, water treatment, electricity supplier, educational department, or other city-run service, since it shows the student has some understanding of their city government's operations. Also code when a post relates to a local government issue. Posts will be double coded with 29-GK *Knowledge of economics and politics and their impact* and 30-GK when referring to local, city-level policies (e.g., "The mayor of my city approves new city laws").

Do not code if student simply provides isolated facts about a city (e.g., "Our state capital is Albany") or local institutions (e.g., a museum or casino) without stating why those facts are relevant to or impacted by city government.

Note from Global Cities: The examples provided relate to knowledge of one's city government. Examples of knowledge of differences between city governments around the world are unlikely to appear in the discussion boards because the curriculum does not prompt students to make comparisons between governments. The topic of governmental differences can be sensitive, and middle school students may not be developmentally ready to engage in these conversations.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article 'Bill De Blasio Seeks to Flood Proof Lower Manhattan by Adding Land' by Bloomberg News. In NYC, we face a problem from climate change that causes our sea levels to rise, and may soon potentially flood our city's land. To counteract this, recently, our Mayor De Blasio proposed a \$10 billion plan to create a seawall on lower side Manhattan, so the rising sea level will have trouble to flood NYC. Although this idea looks very positive, many people have disagreed with the plan. One example is that our U.S. president, Donald Trump, is skeptical about the causes of the climate change (carbon emissions, depleting ozone layer, etc.). In our opinion, Donald Trump's thoughts are very negative towards the progression of the sea wall project. A second example is that Tim Dillingham, an executive director at the American Littoral Society was concerned that marine life can get harmed during the project. In our opinion, Tim creates a good point, because such a large project can truly negatively impact the animals the the NYC ecosystem. Finally, a third opinion is that Roland Lewis, the president of the 52 Waterfront Alliance says that the project may not be very beneficial financially, since \$10 billion is a large amount of the budget with a minimal benefit in the interest of money. In our opinion, we agree with this idea. It is because since this wall doesn't cover all of NYC, there may be more damage costs (of damaged infrastructure). A question we have about these opinions is what influences Donald Trump's skepticism on the causes of climate change? Sincerely, D. and A. is a 3D generated image to represent what NYC would look like if the sea levels had risen more. (This is not a real picture, just a prediction based drawing). (NYC - GC Thread ID 40558331 - Post 838, also an example for 24-CU, 25-CU, and 37-GK)

✓✓ Hello Peers! We are N. and A. from Medford, MA. The most useful wastewater solution for Medford would be Solutions to Stormwater, by GrownNYC. Medford has a problem with stormwater further polluting the Mystic River, as the stormwater goes straight to the Mystic completely untreated. GrownNYC is useful because the water from rain is absorbed by plants on the rooftops of houses. Which prevents untreated stormwater to pollute the Mystic River. **One wastewater solution that is being used in Medford, MA is Massachusetts Department of Environmental Protection. MDEP oversees the recycling of solid and hazardous wastes. This solution is effective because plastic pollutes our Mystic River, so if we manage and control the recycling of plastic, then the Mystic River will get polluted less by plastic. Would a Environmental Protection company be effective in your city cleaning and managing plastic? Sources:Solutions to Stormwater, by GrowNYC,[link] (Medford - GC Thread ID 39694966 - Post 578)**

✓ Hi everyone, Something that surprised me in the videos was i have seen water pollution in my city.It might cause pollution in the global water system because we have bad sewer systems that constantly break and rivers flow into the oceans. **I think one effect of pollution in my city is tat a lot of the budget is going towards fixing them.** I can help stop this by not littering in bodies of water. (Buffalo - GC Thread ID 40135619 - GC Provided)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 31-GK	DEFINITION Understanding that global issues are borderless and affect everyone	DEVELOPMENTAL COMPETENCY AREA Knowledge		

CODING INSTRUCTIONS

Naming or explaining ways in which global issues are borderless and affect multiple people, places, and species. Code cases where posts mention shared conceptions of environment, planet, etc., and describe or analyze how issues like pollution and plastic bags are impacting them. When students use “we,” this can be a cue that they understand that global issues are borderless. If students refer to effects on animal or plant life, then there should be at least an implicit connection to effects on human life to be coded here. If students refer to a global issue at a macro level and also talk about impacts at a micro level, this indicator should be applied. Students do not need to explain their understanding to achieve this indicator; naming or describing is sufficient demonstration.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear G., Thank you for sharing your info graphic. I enjoyed learning some new facts I never knew about our water. I learned that the local government is most responsible for protecting our water quality, and how we don't know if half of the water bodies are safe. **A similarity in water-related issues in our cities is that our lakes and rivers are polluted and we're trying to find ways to clean up the garbage that has potential to get caught up in run-off that will eventually get dumped in rivers, lakes, or oceans. South Florida is also experiencing rising tides rising by 1 inch every year. these similarities and differences exist because most people never realize that what they're doing. What they're actually doing is harming nature, and causing extreme weather conditions that're responsible for rising sea levels.** The solutions you proposed was to donate to companies that help. I think that donating to companies that help is important because these kind of companies have trained professionals that have the proper tools and experience to help clean up the lakes and rivers. A question I have is what actions are you willing to take in your community? Sincerely, D. (Broward - GC Thread ID 40701188 - Post 887)

✓✓ Hi everyone, Something that surprised me in the video was how easily the trash goes in the drain. **I have seen Stormwater Pollution in my city. It might cause pollution in the global water system because the rain from the storm pushes the trash in the oceans, lakes,etc.** I think one effect pollution has on my city is that since the trash piles up in the pipes, the water cant get through the pipes. Something I can do to prevent pollution in my city is to throw away trash instead of littering. Sincerely, S. (Everett - GC Thread ID 40181456 - Post 715)

✓ Dear I., Thank you sharing your project with us! **Our group learned that all schools have problems with water.** Something similar about how our schools use water is that the taps don't work very well. The solutions your group proposed would work at our school because we have taps that don't work too. A question we have for your group is: how did the taps break? Sincerely, A. and K. (Barcelona - GC Thread ID 38795322 - Post 377)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 32-GK	DEFINITION Understanding that global issues are complex			DEVELOPMENTAL COMPETENCY AREA Knowledge

CODING INSTRUCTIONS

Noting complexity of global issues; Recognizing and identifying the challenges of finding, planning, and implementing viable solutions to global issues; Acknowledging and/or grappling with personal lifestyle/enjoyment versus environmental or social responsibility; Proposing solutions to issues at different levels—individual solutions, neighborhood solutions, infrastructure solutions, etc; Recognizing that multiple systems are involved/at play and/or explaining explicit ways systems interact (intercity; local-global). Students do not need to explain their understanding to achieve this indicator; acknowledging, identifying, or recognizing is sufficient demonstration.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, A water footprint is the amount of fresh water a person uses each day. Knowing our water footprint is important because we need to be aware of how much water we use. We must conserve water or we may waste too much. There are two types of water, actual and virtual. Actual water is water that is actually visible like showering, bathing, etc. Virtual water is water that is hidden in different products such as, bagels, donuts, etc... Using a water calculator, I used 1,371 gallons/5190 liters per day, without noticing how much water I wasted. So, I made certain strategies to conserve water, such as being water wise. For example, I would turn off the faucet/sink while I'm brushing my teeth, or take a shorter shower, so this will lower the number of gallons I use a day. Conserving water will help us in the future needs, such as future droughts Sincerely, N. (NYC - GC Thread ID 38872835 - Post 307, also an example for 55-GE)

✓✓ Dear peers, We learned about New York's water system by researching New York City got about 97 percent of its water from the Catskill/Delaware systems and about 3 percent from the Croton system. We was surprised to learn that the water had come from such a far place. Also that there was so much feces in the water system. Also that people waste so much water everyday. We can help my local water supply stay safe and clean by not littering on the streets, and by not clogging the sewage systems. ~Sincerely, K., A., L., S., S. (NYC - GC Thread ID 39261457 - Post 454)

✓ Dear peers, We were surprised by our water footprint because we didn't know how much water we consume We think the challenge to being water-wise is that we can't use a lot of things that use a lot of water to make. We will be more mindful when it comes to our water consumption in order to be water-wise. Like taking shorter showers. This week, we will be more water-wise by taking a shorter shower, Turn off the sink when brushing our teeth, using a reusable water bottle and be careful of our actions. Sincerely, A., T. and S. (Everett - GC Thread ID 38767798 - Post 264)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 33-GK	DEFINITION Understanding that differences in access to information, technology, and resources affect quality of life and perspectives	DEVELOPMENTAL COMPETENCY AREA Knowledge		

CODING INSTRUCTIONS

Acknowledging there are varying levels of access to information, technology, and resources; Making connections between one's access and others' access and connecting that to quality of life and/or perspectives (e.g., reflecting on the availability of green space or clean water in one context versus elsewhere in the world and naming how this impacts one's life). Students do not need to explain their understanding to achieve this indicator; acknowledging relevant differences is sufficient demonstration. Do not code mentions of informational campaigns unless they specifically reference a disparity in information in the target community.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Ok, so water is a major factor in my culture. In the country that I came from (which is Afghanistan), if you have the normal amount of water that you have in America, you are considered rich and extremely lucky. I know, it sounds surprising. But there are multiple ways to get water in Afghanistan, but it isn't really a walk in the park either. There are variants waterfalls and water wells in Afghanistan, but most of the time they are multiple miles away from Afghanis houses, or it's just in the middle of nowhere. [...]. (NYC - GC Thread ID 38633587 - Post 216, also an example for 18-CU)

✓✓ Dear peers, I was very surprised by my water footprint, I couldn't believe that I use that much water. And there are some cities don't have enough water to use, so I am very fortunate to live in Taipei. But water is precious , we can't waste water , so I don't take a bath but take a shower. (Taipei - GC Thread ID 38858263 - Post 282)

✓ Salt life festival where you can enjoy salt, life and festivals. There is food and it is just a great place to enjoy musical fun and a nice fresh cool water. In Jacksonville this is a very popular attraction. We are very lucky to have enough water to have a festival with where some people don't have enough water to drink. The meaning of salt life is to enjoy everything to do with water, sports, drinks, music. In this festival you can also watch plenty of surfing, boating, windsailing, and so much more. (Jacksonville - GC Thread ID 38669130 - Post 196)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 34-GK	DEFINITION Understanding that problems may be solved differently depending on socioeconomic status, natural resources, government policy, and political differences		DEVELOPMENTAL COMPETENCY AREA Knowledge	

CODING INSTRUCTIONS

Naming or explaining specific ways in which solutions to problems may differ based on (i) socioeconomic status of communities implementing solutions, (ii) natural resources in the local area, and/or (iii) government policies and political differences. The term “solution” should be interpreted expansively (e.g., a general solution to a global problem, even if a detailed plan is not presented). A statement such as “this reflects my local...” can be a cue that this indicator should be applied. Students do not need to explain their understanding to achieve this indicator; naming is sufficient demonstration. Note: Code for 22-CU *Understanding that problems may be solved differently depending on cultural factors* if the student names differences related to culture rather than socioeconomic status, natural resources, government policy, and/or political differences.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ A difference is that from the people we surveyed the most frequent answer we got was that most people said that access to clean water was the most important issue to them while you got rising sea levels and pollution in local waterways. I think these similarities and differences exist because of our cities different locations. Miami is very close to the ocean, unlike our city. We have come to a conclusion that the reason for our different answers is because we are farther away from the ocean and we can not see the direct impacts of rising sea levels in our own city. We think that if we resided in a country closer to an ocean we would have more similar answers too. (Toronto - GC Thread ID 40619931 - Post 949)

✓✓ Dear peers, For the past few weeks, we have been learning about different city solutions. The city solution we think is helpful for our city is Mr.Trash Wheel because New York City’s body of waters are polluted with trash. A solution that is already used in our city are Green Roofs in the Botanical Garden to reduce storm This is a picture of Mr. Trash Wheel, a possible city solution for NYC. water that eventually flows into the sewers. The solution reflects our local culture and geography because in our city, many people litter on land and in water, but since there’s a lot of wind, the litter on the land gets blown into our city’s body of waters. Signed, N., E., A.,and M. (NYC - GC Thread ID 39746957 - Post 584)

✓ I learned how different cities deal with water issues (Changing yourself, talking to representatives, making others aware, etc.) (Miami - GC Thread ID 40877486 - Post 1173)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 35-GK	DEFINITION Ability to apply research skills (finding, selecting, and applying information from multiple sources) to global issues			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Describing research processes that can be broadly described as finding, selecting, and applying *existing* information, be this from primary and/or secondary sources (e.g., consulting websites, books, videos, newspapers); Citing sources; Comparing multiple sources. This code is to be distinguished from 51-GE *Gathering and interpreting information from people in one's own city and culture*, and 52-GE *Gathering and interpreting information from people in other cities and cultures*, both of which involve students actively generating their own information, for example through interviews, surveys, tracking or observing their own behaviors, or field research. The distinction is between existing information (coded here as 35-GK) and information that students generate themselves, not between primary and secondary sources.

Note: Although the indicator suggests that multiple sources need to be consulted, code even if only one specific source is described. Also code even if students generically talk about looking up information on websites, etc. There is no need for students to demonstrate that they did the research they claim to have done; this code is to be applied if they describe the research process even if they do not share specific findings.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ We gathered information by using multiple sources such as the New York water system map given to us during and computers to provide us with answers and information during the period of time we had to answer and think about these questions, we used some internet resources to gather some information and references we needed for some guidance. The map we received on the NY water system helped us understand the whole aspect of the water in New York. We also heard from Ms. Robin Sanchez from the DEP, (Department of Environmental Protection). We also used our library notebooks for some background information to help us out with the questions. We took our time for this step as gathering information for any project is important. This is how we gathered our information! (NYC - GC Thread ID 39387221 - Post 483, also an example for 36-GK)

✓✓ The way I researched this post is by going on JEA's website which included all of the information I needed. JEA is the supplier of Jacksonville's water and electricity. The water first is pulled from the Florida aquifers thousands of feet underground which then goes to a water treatment plant where the water is put through the aerator which removes the sulfur. After that, the water is put with chlorine to clean the water. The water is then transported in a network of pipes traveling up to 4,600 miles (about 7,403 kilometers). After the water is transported to the home and is used and poured down the drain and becomes wastewater, it is then taken to pump station to pump station until it reaches a wastewater treatment plant that filters out the solid waste and turns it into fertilizer. After that, the water is put though an aerator and any oil or fat in the water is eaten by microorganisms. The citizens of Jacksonville keep the water supply safe and clean by not throwing chemicals or oils and fats down the drain and instead putting them in the trash. I was most surprised that Jacksonville's water system uses the solid waste and turns it into a fertilizer called GreenEdge®. From ®[link] (Jacksonville - GC Thread ID 39320287 - Post 460, also an example for 23-CU)

✓ Hi Everyone, The waterway we researched was the Okeechobee river,We chose it because that river was fascinating to our group.We did our research by searching facts, and looking at guides of the lake. Our experience of doing the research for this project was one of our group members was power point certified, and he was very helpful to our project and all of the other things We would like your feedback on our power point because we want to know how we did. Our power point had many facts about lake Okeechobee and the surrounding area. our power point was also about how deep and wide the lake is & also it had facts about the name of the lake from the locals. some other things that our power point consisted of the wildlife of the area Lake Okechobee.pptx Sincerely, A., E., R., J., J., J., & A. (Broward - GC Thread ID 39933532 - Post 636)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 36-GK	DEFINITION Ability to find information about global issues using credible sources from around the world	DEVELOPMENTAL COMPETENCY AREA Skill		

CODING INSTRUCTIONS

Citing or sharing information about global issues from multiple credible sources. Mentioning two sources is sufficient to code; the sources do not need to be international as long as they are two different sources. Note that credibility can be determined through the students' citation of a source. Students do not have to explicitly address a source's credibility as long as they identify the origin/s of their information. It is not necessary for students to follow academic citation conventions for this code to be applied.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ We gathered information by using multiple sources such as the New York water system map given to us during and computers to provide us with answers and information during the period of time we had to answer and think about these questions, we used some internet resources to gather some information and references we needed for some guidance. The map we received on the NY water system helped us understand the whole aspect of the water in New York. We also heard from Ms. Robin Sanchez from the DEP, (Department of Environmental Protection). We also used our library notebooks for some background information to help us out with the questions. We took our time for this step as gathering information for any project is important. This is how we gathered our information! (NYC - GC Thread ID 39387221 - Post 483, also an example for 35-GK)

✓ Dear Global Scholars, We researched the Mystic River. We researched this river because it is right behind our school and we know it very well. We did our research on www.MWRA.com and www.Mysticriver.org. This experience helped us learn about one of our local river. We would like our international peers to give us feedback on what they learned from our presentation. Our presentation: <https://spark.adobe.com/video/> Sincerely, B., B., S., S., and A. (Medford - GC Thread ID 40046325 - Post 669)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 37-GK	DEFINITION Ability to synthesize different perspectives on the same topic to draw conclusions about global issues			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Distilling information from different sources/perspectives to develop an argument or make a claim about global issues, drawing on evidence as needed. Note that this can involve discussing debates or different points of view as discussed in a single article or source. Perspectives may come from different sources (e.g., published writings by experts or journalists, speeches by public figures, and stances shared by classmates and online peers). Code if a student has described making their own observations (e.g., observing leaky faucets or recycling systems in their school) as long as they are also synthesizing their own observations with other perspectives (e.g., from secondary sources or from other people's observations). Do not code a student's own observations if there is no synthesis.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear peers, We analyzed the news article 'Bill De Blasio Seeks to Flood Proof Lower Manhattan by Adding Land' by Bloomberg News. In NYC, we face a problem from climate change that causes our sea levels to rise, and may soon potentially flood our city's land. To counteract this, recently, our Mayor De Blasio proposed a \$10 billion plan to create a seawall on lower side Manhattan, so the rising sea level will have trouble to flood NYC. Although this idea looks very positive, many people have disagreed with the plan. One example is that our U.S. president, Donald Trump, is skeptical about the causes of the climate change (carbon emissions, depleting ozone layer, etc.). In our opinion, Donald Trump's thoughts are very negative towards the progression of the sea wall project. A second example is that Tim Dillingham, an executive director at the American Littoral Society was concerned that marine life can get harmed during the project. In our opinion, Tim creates a good point, because such a large project can truly negatively impact the animals the the NYC ecosystem. Finally, a third opinion is that Roland Lewis, the president of the 52 Waterfront Alliance says that the project may not be very beneficial financially, since \$10 billion is a large amount of the budget with a minimal benefit in the interest of money. In our opinion, we agree with this idea. It is because since this wall doesn't cover all of NYC, there may be more damage costs (of damaged infrastructure). A question we have about these opinions is what influences Donald Trump's skepticism on the causes of climate change? Sincerely, D. and A. is a 3D generated image to represent what NYC would look like if the sea levels had risen more. (This is not a real picture, just a prediction based drawing). (NYC - GC Thread ID 40558331 - Post 838, also an example for 24-CU, 25-CU, and 30-GK)

✓✓ We read the article Does New York City Need a Sea Wall? Your Chance to Weigh In Has Arrived and according to this article global warming might cause the sea levels to rise, this can cause flooding. NYC is near the sea so flooding can greatly impact us. NYC state officials want to building a sea wall. This sea wall will protect NYC from the impact of flooding. But there is a debate on whether or not to build this wall because building this wall can cost around \$120 billion. Another thing is building this wall can take many years to get certified and be built. On the other hand building this wall can protect NYC citizens from any floods. If these floods get to powerful it can cause a lot of damage so in our point of view we should build this sea wall. We hope we have changed your mind about should NYC build a sea wall. (NYC - GC Thread ID 40559383 - Post 844)

✓ Dear A., Thank you for sharing your info graphic with us. I enjoyed reading the graphs from the surveys. I learned that your community thinks that pollution in local waterways is the worst water issue. And I also learned that your community also thinks that changing your behavior is the best solution. A similarity that our city's have is that we both have storm water related issues. Fort Lauderdale, FL has storm water related issues because all the water that hits the street will go in a storm drain and end up in our local waterway. It can be polluted and contaminate our water ways. A difference that our community's have is that your community thinks that changing your behavior was the best solution. But my community thought that talking to a city leader was the best solution. Your solution would help but not as much as talking to city leaders according to my community. A question I have for you is how much pollution does storm water create? Sincerely, S. (Broward - GC Thread ID 40641869 - Post 881)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 38-GK	DEFINITION Recognition of the importance of learning about other cities and countries			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Acknowledging that it is important to learn about other cities and countries.

Do not code simply noting that something is interesting or informative. Students should say why learning about something is important. Thanking others for teaching them about their cities or countries does not count unless the student acknowledges why it is important to learn about other cities or countries.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ Hi everyone! My name is V. Last Sunday,me and my friends went to Taipei Zoo for our Biology homework.We saw many different kinds of animals and we learnedmany new knowledge about animals.I think we should go to more places to learn more new knowledge.It can let you study more easier and it can also let you rememeber more easier. (Taipei - GC Thread ID 40181765 - Post 716)

✓ After a year of the project,I have learned about water in many different cultures and how it effected them.My ideas has changed because now I know that many different places have different situations.My ideas about the different cities changed because I realized that cities water pollution is different then where I live. I hope everyone can use water more wisely in the future.Global Scholars teachme to figure out many more ways to help clean my community. (Taipei - GC Thread ID 41053641 - Post 1183)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 39-GK	DEFINITION Recognition of the importance of learning about global issues that affect us all			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Acknowledging that it is important to learn about global issues that affect us all. Code when a student states that they (a) are part of an information campaign to generate awareness around a global issue and/or (b) plan to share information about a global issue informally with friends or family (the implication being that the student believes the issue is important). Do not code descriptions of a project that is addressing a global issue unless that project is related to building knowledge or sharing learning around global issues. Do not code when a student says they look forward to learning more without explicitly saying that learning about global issues is important, as this is captured in 43-GE *Interest in global issues*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ For this project, I want to warn people about the severe water issues that our country is facing, such as water pollution, rising sea levels and many more. Most people over look these things, so I want to teach them about this. even though holding a public speech isn't possible, I can still put the video up on the monitor at the entrance of my school. solving these issues alone isn't what I can do, but if I just let some people hear my voice, it might spread across the whole globe. (Taipei - GC Thread ID 40899293 - Post 993)

✓✓ The action we will take to achieve this goal is do a game to kids of primary school and do a presentation about the plastic waste. Achieving this goal will help our community by changing the behavior of people so that they are aware of this huge problem that affects all the world. Please give us your advice about our idea. (Barcelona - GC Thread ID 40995064 - Post 1003)

✓ I think one effect pollution has on my city is that it makes my city very dirty. Also this could affect the waterway when it rains. A good solution could be to make videos on tv to make people aware of the importance of keeping our cities clean. (Miami - GC Thread ID 40090648 - Post 760)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 40-GK Page 1 of 2	DEFINITION Recognition of the importance of analyzing multiple perspectives		DEVELOPMENTAL COMPETENCY AREA Attitudinal	

CODING INSTRUCTIONS

Naming specific reasons why analyzing multiple perspectives is important; Expressing positivity relating to recognizing multiple perspectives or mentioning the value of weighing different forms of input or perspectives.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear L., Thank you for sharing your infographic with us. we enjoyed the images you shared in your graph and your easy to follow statistics such as adding the exact percent of participants. **You can clearly see how 33% of your participants chose rising sea levels as well as pollution in local waterways.** This however, surprised our group due to the fact that we thought we might get similar answers as our countries are both in North America and not to far apart.

I learned that since Miami is close to the ocean most people were concerned about rising sea levels and less people you asked chose access to drinking water and extreme weather. Without this infographic I think that our group would have inferred a different outcome because we thought that we would have similar answers.

A similarity in water-related issues in our cities is that we think that the most frequent answers that we received were the answers that fellow members of our communities were the most afraid of. When we surveyed we asked some people why they chose access to clean drinking water and most responses were that they wanted to help stop people going sick from unclean water everywhere, and they didn't want it to reach the point where they could no longer have the privilege to clean water. As you said, most people chose rising sea levels because you are next to the ocean, if sea levels keep rising your city can face consequences. We think that a similarity is that out of the people we chose they picked the answer they knew could impact their lives at some point.

A difference is that from the people we surveyed the most frequent answer we got was that most people said that access to clean water was the most important issue to them while you got rising sea levels and pollution in local waterways. I think these similarities and differences exist because of our cities different locations. Miami is very close to the ocean, unlike our city. We have come to a conclusion that the reason for our different answers is because we are farther away from the ocean and we can not see the direct impacts of rising sea levels in our own city. We think that if we resided in a country closer to an ocean we would have more similar answers too.

We found that you did not propose a solution for our city, but when looking back at our own infographic we think that some of our solutions may work for your city. One of our solutions that we created was to educate the people around you by doing some research or joining a club or organization. This could help your city because you must first stop climate change in order to fix rising sea levels, if you educate your friends and family about the major harm CO2 is causing to our Earth we think this could be very beneficial to you.

A question we have is "have you personally or anyone you know in Miami seen or felt the negative impacts because of the rising sea levels in the ocean or seen any wildlife die due to pollution such as plastic and other forms of garbage." We would like to know this because rising sea levels and pollution in waterways are very important but since Toronto doesn't have lots of wildlife in our lake we don't see the direct impacts first hand unlike some people in Miami. Sincerely, H.,T., J. and E. (Toronto - GC Thread ID 40619931 - Post 950, also an example for 20-CU and 40-GK)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 40-GK Page 2 of 2	DEFINITION Recognition of the importance of analyzing multiple perspectives			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓ Dear Peers and Teachers, During this semester, we shared various ideas from different viewpoints, and that opened up a new perspective that I observe and evaluate information in detail. I'm grateful that there is a chance to cooperate and discuss the situation, problem, solution, and of course to exchange our ideas. It's also a chance to learn from international peers on the internet (a new experience). Thanks too all the work others has done to create this opportunity for us to learn. Finally, I want to say : A small seedling can make a big difference, can you be that seed ? You can, You must, and You will (change the world) Be the change you want to see..... P.S. I just finished watching " Wonders of the Universe ", quite interesting... " We are a brief flourish of light in the long dark story of the universe. " Best Wishes and Good Luck Sincerely, K. 2019,5,24 (Taipei - GC Thread ID 41119899 - Post 1164, also an example for 25-CU)

✓ Hello global peers, The best part about doing the survey was knowing that we all live in the same city and the diversity of answers people gave was amazing. In fact, two people that we talked to had completely different ways of expressing the question. A challenge we experienced was surveying enough people because my school was the main place we surveyed and when we got home over the weekend it became much harder to survey but, the bulk of the work was easy. Something surprising that came up was that people didn't seem too worried about extreme weather. This was surprising because with hurricane season coming soon and the winds becoming stronger, that means bad news for people's homes and any building unfortunate enough to be in the hurricane's path of destruction. The water-related issue that is most important to people in our city was pollution in local water ways. This is most likely because pollution can cause a lot of nasty problems like killing the wild life that live in our community's water way. We would like your feedback on how we formatted our survey and if we could make it look better in any way nicer or more organized. Sincerely, S. and M. (Broward - GC Provided)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 41-GE	DEFINITION Ability to engage in inclusive problem solving			DEVELOPMENTAL COMPETENCY AREA Skill

CODING INSTRUCTIONS

Describing and actively engaging in inclusive problem solving, which involves gathering input, feedback, or data from others who are impacted by the problem being solved. This can include asking for feedback on how to improve an existing solution. When addressing global problems, this can involve anyone in the world who could be impacted. Collaborating with group members on a group project does not count as working with others; however, working to solve problems with other students outside of a project group, including other Global Scholars on the platform, is counted. Relevant problem-solving activities include conducting surveys to gather information about problems or about opinions on solutions. Posts should be double coded with 51-GE *Gathering and interpreting information from people in one's own city and culture* or 52-GE *Gathering and interpreting information from people in other cities and cultures* (depending on the others' locations—one's own city versus other cities) when the information gathered is meant to help solve problems or includes solutions. "We" is a key word to suggest inclusivity, but only code posts that use "we" if it is clear that the "we" includes people outside of their group.

The following should not be coded: Asking technical questions, such as how to edit a video; Simple information sharing (e.g., "I will tell my family about this so we can make changes together"); Intentions to engage in inclusive problem solving without having done so yet; Asking for generic feedback without a specific problem to be solved (e.g., "Please give us advice about our video" is insufficient, but "Please give us advice because we can't figure out how to make a video that will appeal to children under age 8," would count because they are asking for feedback on a specific problem).

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Everyone, For our Community action project we have worked 2 classes together. in order to choose our goal we made a survey to choose our main concerns related to the main water issues that we have been working in the e-classroom during this year. 5th graders also helped us doing some presentations about the water cycle. We believe that it was very important to learn where water comes from so everybody realize its value. Our project focus on 4 issues: Water clean-up, water conservation, storm water and pastic waste. We belive that all the topics are related and are very important so we want to work with all of them but together. We started 4weeks ago by working in groups and brainstorming. We divided the topics and made groups so each group was in charge of one topic Each group became an expert in the issue they were working on. Also, inside the group M. (our teacher) gave us a role so now, everyone was in charge of something. The roles were the spokeperson, the writer, the journalist, the time keeper.... Our goal was to inform to our neighbourhood and families about those issues and to find solution that everyone could implement. We to presented our impact by creating models and posters and presented them celebrating a "water party" that is something new that we wanted to do just for this occasion ,(we did it last week). Our families and the rest of students came to enjoy our presentations. Also a representative of our local city council came to the school. We were very happy. We made an imovie video that we're are going to share in our website Here youhave the link to our video [link] Your friends. (Barcelona - GC Thread ID 41172945 - Post 1163, also an example for 53-GE)

✓✓ Hello everyone, my name's J. and here'e my opinion on the survey me and my peers did together. The greatest part about doing the survey was being able to find out what my community wanted to take care of the most. I surveyed my peers, my family, and many more other people in my amazing community. A challenged we experienced was getting the people to do our survey. Many adults had yelled and said many bad things to my peers, but despite that, they didn't stop no matter what. The water- related issue that is most important to people in our city is Access to clean water. Clean water is a key factor in our survival as humans and for every other living organism in this world. Clean water is important and should be our top priority in our Earth and Water saving conquest. We would like you feedback on what you think is most important for your community. We want you opinion on what you think we should do in order for us to save our amazing and beautifulplanet. Sincerely, J. (Broward - GC Thread ID 40716840 - Post 895, also an example for 9-AD)

✓ hello everyone the mostfascinating thing that i have learned in this project is how to listen to other peoples point of view on how to solve a problem. My ideas have changed drastically about different peoples problems and how we could solve them. The tools that were the easiest for me to do is a power point and the infographic. Now i will be more mindful about what I do for now on (Miami - GC Thread ID 41151303 - Post 1201)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 42-GE	DEFINITION Interest in the larger world, particularly unfamiliar people and places			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Expressing curiosity about the larger world, including unfamiliar people and places. This may take the form of asking questions about another student’s life, interests, or the place where they live (e.g., “Which is your favorite skyscraper?” or “What do you do in your free time?”). It may also be a statement of enthusiasm to learn more or an expression of interest in something that has been shared (e.g., “I think what you shared is interesting” when what was shared was about unfamiliar people and places). Instances when a student shows interest in solutions to global issues, the impact of global issues on a city, or the global issue being explored in general (e.g., “tell me more about nature”) should fall under 43-GE *Interest in global issues* rather than this code. There are certain sentences where both indicator 42-GE and 43-GE may be present in one excerpt, such as, “I find the history of buildings in your city to be super interesting (42-GE), and I also think it’s great that over time they have been designed to conserve more and more water (43-GE).” Questions that allude to different cultures (e.g., “Does everyone waste food?”) are coded here and not in 4-AD *Awareness of different cultures within one’s school, city, region, country, and world*. Similarly, questions eliciting information about peers’ cities/cultures or experiences are coded here, not in 49-GE *Seeking opportunities to communicate with people in other cities and cultures, as well as one’s own*. Questions soliciting the perspectives of others without acknowledging the legitimacy of those perspectives are coded here, not in 25-CU *Recognition of different perspectives as legitimate*.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Dear Buenos Aires, I truly love all the amazing gardens you have around your school and city. We don’t have any gardens outside of our school, so it was really cool to see all the plants, fruits and vegetables you grow. You truly are the “Escuela de naturaleza” the school of nature. I also love the amazing art and murals you have around your school. You have many talented artists! I love the buildings you showed us that are around your city, they are so colorful. You will not find a building like that around our city. Overall, I think you have a truly amazing city and school! -B. (Medford - GC Thread ID 38538533 - Post 155, also an example for 12-AD and 26-CU)

✓✓ hi what are the the dates? i seem really interested in this.i will do some researching thanks for telling us about this. (Everett - GC Thread ID 38656027 - Post 188)

✓ what is in the casino (Jacksonville - GC Thread ID 37970738 - Post 14)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 43-GE	DEFINITION Interest in global issues			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Expressing curiosity and wanting to know more about global issues. This includes asking questions related to a global issue, even if they appear technical (e.g., “A question we have for your group is: how do the subway trains work?” or “What types of faucets do you think will be water wise?”). If the student explicitly expresses interest or surprise about a global issue, then it should be coded (e.g., “I was amazed at how much electricity I used per day.”). Questions eliciting information about global issues are coded here, not in 49-GE *Seeking opportunities to communicate with people in other cities and cultures, as well as one’s own*. Positive replies that specifically refer to a global issue and which convey enjoyment or positivity towards learning about that global issue are to be coded (e.g., “The amount of food you save is great!!!”). More general posts about the overarching global issue, such as water in the World of Water curriculum (e.g., “Tell me about water”), would be coded as 43-GE instead of 42-GE *Interest in the larger world, particularly unfamiliar people and places* because presumably they are interested in water supply or water cleanliness and do not just have a general interest in the water in their peer’s city. However, more general positive replies such as “good job” or “Could you tell us more about your video?” should not be coded here. Discussions of the importance of learning about global issues should be coded in 39-GK *Recognition of the importance of learning about global issues that affect us all*, not here.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ I read an article by the title” NASA’s Greenland Mission Still Surprises in Year Four”, written by By Carol Rasmussen, of NASA’s Earth Science News Team which showed me how climate change effects the earth such as melting glaciers and they can take away animal habitats and raising sea level. THAT is kind of scary! What if the sea level continues to rise!?!? Folks on the beach are going to have to move farther up, whole neighbor hoods destroyed, and LOTS OF DESTRUCTION TO THE ENVIORMENT!!!! (Jacksonville - GC Thread ID 40525365 - Post 810)

✓✓ I really enjoyed that you had somethinggoing on in the background of some of your scenes like in the library. I’d bet that it stinks that you can’t drink tap water though. We also have a track and a school library at our school as well. I would like to know why you aren’t able to drink tap water in Shanghai. Is it pollution or is something wrong with tap water in general? From, N. (Medford - GC Thread ID 38467263 - Post 148)

✓ Dear international peers, My name is A., and I am a student in Shanghai, China. I like to learn about science related subjects, and I also like to play games. There are a lot of things that make my city special. Shanghai is the center of economy in China (and possibly the world). It is also the city second in size in terms of population in the whole world. There are a lot of extremely tall buildings in Shanghai such as the Shanghai World Financial Center and the Jin Mao tower. Transportation is also very advanced in Shanghai, Shanghai has the world’s busiest container port. I am not very sure about whether there are water problems in Shanghai. In comparison to Chinese cities in the north, water is not a problem in Shanghai, and everyone can use as much water as they want. Can you tell me anything about your city and whether it has water problems? A. (Shanghai - GC Thread ID 38171995 - Post 86)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 44-GE	DEFINITION Recognition of the value of inclusive problem-solving		DEVELOPMENTAL COMPETENCY AREA Attitudinal	

CODING INSTRUCTIONS

Articulating the importance of inclusive problem solving. Inclusive problem solving involves gathering input, feedback, or data from others who are impacted by the problem being solved. Collaborating with group members on a group project does not count as inclusive problem solving, but working to solve problems with other students outside of a project group, including other Global Scholars on the platform, does count. “We” is a key word to suggest inclusivity, but only code posts that use “we” if it is clear that the “we” includes students outside of their group. Code if the solution is to ask an adult for help; this is the lowest level of demonstration for this indicator. Also code when students articulate the importance of inclusive problem solving that does not include the students themselves. There should be evidence that the student understands that people need to take collective responsibility for solving the problem. Do not code when a student’s solution is that “the school should/could do something about this,” but the student does not indicate that they play a role in solving the problem.

Articulating the value of the following would not count: Simple information sharing (e.g., “I will tell my family about this so we can make changes together”) or asking for generic feedback without a specific problem to be solved (e.g., “It’s important to get outside advice about our video”). However, something like, “It’s important to get advice because we can’t figure out how to make a video that will appeal to children under age 8,” would count because there is a specific problem.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Everyone, Our Community Action Goal is to educate the school community about wastewater and how to prevent garbage from making its way to our oceans. The people we surveyed for the Water Issues Survey project said that pollution in local waterways was their biggest concerns. We wanted to create fun and easy ways for the people in our school to help reduce marine debris in order to preserve clean water and decrease pollution. We researched the topic and found that Storm water pollution was a major issue. In order to address this problem we will stencil storm drains around our school. This will remind people that litter and pollutants that enter the storm drain can end up in our waterways. We know that stenciling will not solve water pollution problems alone, but it’s a practical, positive first step. We discussed organizing a group to clean up the park across from our school and we think this is also something we can do. Our class will also make posters and put them up around school to help teach the school community all about water issues. The other thing we all liked was the idea to create a fun little game and informational app to help students and their families gain knowledge about recycling so that they can join in to help solve the different problems that face the Everett Community. We want to present our impact by creating a Google slide show to share pictures and reflections. Do you have any suggestions about what could be good ways to educate students on stopping storm water waste? Your Ambassador, P. (Everett - GC Thread ID 40917012 - Post 964)

✓✓ Hi everyone, **Something that surprised me in the videos was that marine dabree is that harmful to the earth I have seen (type of pollution) in my city.** It might cause pollution in the global water system because it could spread through the oceans and get into many other waterways. I think one effect pollution has on my city is that it is messing up the waterways and it might mess up the pipes. Something I can do to prevent pollution in my city is to recycle more and convince some of the people i know to do the same because change starts with one person A question I have for my peers is there any other ways that can help the water system Sincerely, A. (NYC - GC Thread ID 40094639 - Post 701)

✓ Hello Global Scholars, This is A., K., B., M., and N. While doing our field research, we looked at the water access points and found the problems. An important thing we learned is how much water is wasted in our school. Our school isn’t water wise because students leave water bottles around and there are many leaks. **We think we should ask a teacher to call a plumber** and use less water bottles. From, A., K., B., M., and N. [link] (Medford - GC Thread ID 39128647 - Post 406)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR	DEFINITION			DEVELOPMENTAL COMPETENCY AREA
45-GE	Recognizing one's capacity to advocate for and contribute to local, regional, or global improvement			Attitudinal

CODING INSTRUCTIONS

Recognizing one's capacity to advocate for and/or contribute to local, regional, or global improvement; Expressing a sense of efficacy in relation to participating in advocacy and other social change efforts at the local, regional, and/or global levels. Code in cases where students make explicit "I can" statements indicating their sense that they have the capacity and agency to do something. Such expressions of efficacy are distinct from "I/we will" statements, which should be coded 47-GE *Willingness to take action*, and from past or present actions ("I/we did" or "I/we are doing"), which should be coded 55-GE *Working to contribute to local, regional, or global improvement*. However, note that 45-GE should also be applied where students' descriptions of their willingness or actions include implicit statements of efficacy. For example, code when students express pride in community actions ("The accomplishment we are most proud of is...") or name specific accomplishments ("Things we accomplished so far are..."). Code posts where the student says "you can" because it indicates that the student understands personal agency and a capacity for action. Also, code more implicit references to capacity—for example, instances in which students describe how proposed community actions will contribute to positive change ("The action we will take is... Achieving this goal will help our community by..."). Such excerpts should be double-coded as both 45-GE and 47-GE. "I can" statements that explicitly name a sense of responsibility towards one's city should be double coded as 45-GE and 5-AD *Awareness of one's identity as a citizen of one's city*. Do not code when a student points out things that others can do to fix a problem. For example, a student saying "The school can..." does not necessarily show that the student understands that they can do something to fix the problem.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Global Scholars! Something that surprised me in the videos was the types of pollution and their different effects on ecosystems. I was also surprised about how severe the effect of phosphates is on animals. I have seen many different types of pollution in my city, Toronto. One type is marine debris. It causes pollution in global water systems in many ways. One way is that marine animals who swim in the polluted water every day can mistake the garbage for food. From eating it, they can become sick and possibly die. It also damages their habitats, such as coral reefs and can be led back to us if we eat fish that have consumed plastic or other types of garbage. It also hurts our city's economy. This is because it costs a lot of money to clean up. Another thing I have noticed is the overfilled trash cans on every street. There are lids, used as an effort to keep all of the trash inside of the can and not able to blow away; although, they can be kind of useless when the cans are too overfull.

Since marine debris is hurting animals, the economy, and our health, and overfilled trash cans have become very common, we have to take action. Something I can do to prevent pollution in my city is to reduce, reuse, and recycle. If I am about to throw something away, I should think twice about it and see if I could reuse it and make sure I am throwing it in the right bin. Another thing I can do is to bring non-plastic shopping bags from home when we go grocery shopping, use reusable water bottles instead of paying more and more money for plastic ones, and being more mindful while walking the streets. We should be aware if we are throwing things in the right bin or maybe if there is a community clean-up, you could participate or maybe even arrange one. Educating our community about the pollution we see every day in our city and encouraging them to take action is very beneficial as well. Hope to hear from you soon, T. (Toronto - GC Thread ID 40104627 - Post 763)

✓✓ Hi everyone, For our field research, a large group of us stayed after school on several occasions and conducted a water audit through our building. We have four floors in the school and broke it down by floors. We checked all the bathrooms; sinks ; toilets, we also checked all the water fountains. We took pictures and videos of some of the issues we found. We found the water meter and checked it 3 times to figure out how much water we use in a week. We created a Google slide presentation. The most important thing we learned is that we are not wasting that much water. The problems that we found can be fixed and we can become more water-wise. We found 15 water issues. We created a form that will be used to track the problems until they are fixed. We have approximately 1400 people who use our facility daily. We made some posters and put them up around school to educate our school community on conserving water and becoming water-wise. We understand it is a group effort and when we work together it makes a difference. We hope you enjoy our slide show and learn from it. We learned a great deal and have changed some of our habits in order to be water-wise. Thanks, Ambassadors Grade 6 (Everett - GC Thread ID 39021773 - Post 355, also an example for 16-AD)

✓ Hello this is J. from Jacksonville. A water celebration we have here is the Manatee festival. This is a fundraiser to help protect the manatees. It started in 1985! You participate in it by going to a state park and pay and watch things like manatees and dog shows. I think that an important fact is that it is illegal to touch manatees even though they are not endangered, they are only protected. (Jacksonville - GC Thread ID 38669666 - Post 115)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 46-GE	DEFINITION Appreciation of language learning as a means of communicating and collaborating with people around the world			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Explicitly acknowledging the value of language learning as a means of communicating and collaborating with people around the world, or using encouraging or positive language regarding the study of a particular language, including English.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ Dear Global Scholars, \ We are from Everett Massachusetts, which is located in the Northeast part of the U.S. Keep working on your editing and language. Great job on the video by the way just keep working hard each day. Keep working on your english and you will be able to communicate with other people that don't speak your language. What language do you speak? We would love to learn more about your city and culture. Stay in Touch, K. and J. :) (Everett - GC Thread ID 38433670 - Post 92)

✓ We would also like to learn about other languages and cultures all over the world. (Everett - GC Thread ID 38434289 - Post 93)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 47-GE	DEFINITION Willingness to take action to address global issues			DEVELOPMENTAL COMPETENCY AREA Attitudinal

CODING INSTRUCTIONS

Indicating a desire and clear intention on the part of the student to take action, make changes, and/or solve problems, including: Making plans to do something; Thinking in terms of the future; Explicitly naming intended or planned shifts in habits or behaviors; Expressing an interest in or a sense of responsibility to educate others (“I must...”); Expressing excitement, positivity, and/or conviction (a “we can—and must—do it!” attitude) often with a sense of urgency. Such expressions of interest, willingness, and responsibility are distinct from “I/we can” statements, which should be coded 45-GE *Recognizing one’s capacity to advocate for and contribute to local, regional, or global improvement* and from reporting of past or present actions (“I/we did” or “I/we are doing”), which should be coded 55-GE *Working to contribute to local, regional, or global improvement*. Instances in which students describe willingness alongside recognition of their capacity to take action should be double coded 47-GE and 45-GE (e.g., “The action we will take is... Achieving this goal will help our community by...”).

Do not count posts in which students simply repeat the goal of their project without indicating (explicitly or implicitly) that they plan to take individual or collective action through the project. However, something like, “The solution we propose is to not do X...” would indicate that they plan to make a change because of the use of the collective “we.”

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi everyone, Our Community Action Goal is to help everyone in the school use less plastic. The action we will take to achieve this goal is to make a piktochart and show it in front of all the students. Then we will make a presentation for the plastic waste for everyone in the school. We are going to make some art from recycled items to raise awareness for plastic waste. Achieving this goal will help our community to take our own backpack when we go shopping, instead of using a plastic bag. We will help our community use our own lunch boxes to take the food we didn't finish yet, instead of using plastic boxes. We will help our community to take our own bottle when we go out, instead of buying plastic bottles. Please give us your advice about how do you use plastic outside? Where do you use too much plastic in your city? Sincerely, Your friends in Beijing, China. (Beijing - GC Thread ID 40929960 - Post 975)

✓✓ I was not surprised by my water footprint because I always use way too much, and eat too much, and sit on my bed all day eating water. I think the challenges of being water wise is because if you start out using a lot of water, it's hard to switch since it was the way you live and you have to shift the way you live to save water even though you have full access to it and can always live a life with a lot of water to use. **What I will do this week to be water wise is to, stop eating all the food in the fridge at night, stop using the restroom unnecessarily, and stop staying in the shower for longer than I need to be.** The strategies I have to share is to not eat a lot, don't use the bathroom, and don't bathe as much. (Jacksonville - GC Thread ID 38805935 - Post 274)

✓ Hi Our group made field research by looking at the taps and showers. We learned that we have to save water. Our school is not water-wise because the taps stop streaming water after 10 seconds. **The solutions we propose to conserve water at school are: don't throw trash into the toilet because you'll have to flush the toilet many times.** Sincerely, A., A., P. and A. Our presentation (it's very short, but our school is new so there aren't any things broken) (Barcelona - GC Thread ID 39089250 - Post 363)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 48-GE	DEFINITION Using digital tools to learn from and communicate with students from cities around the world			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Sharing evidence of using digital tools or describing having used or using digital tools to learn from and/or communicate with students from cities around the world, other than the use of the Global Scholars online discussion board platform itself. Digital tools include, but are not limited to: the Internet, digital cameras, tablets, a digital slideshow presentation, an online video, digital photographs, and online infographics. Include posts where students say that they learned from other students' digital content (e.g., "I learned a lot from your video."). Do not code if they refer to a website or other digital tool that they learned from unless that digital material was made or shared by one or more students in another city (learning from a CNN article would not be coded, for example). Do not code generic mentions of videos that students learned from unless it is clear that other students made or shared the video.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hello fellow students, our Global Scholars CAPis focused on spreading the knowledge of hidden water. What we did to spread this knowledge, wecreated a website, an instagram account, and alsoa twitter account Sincerely, R.,D.,R.,S.,J.,T.,R. (Medford - GC Thread ID 41118261 - Post 1101, also an example for 54-GE)

✓✓ All the videos were so awesome. I liked them all. I lovethe one about Manhattan, New York. They did a great job explaining how their city works and even some things they like to do. They also explained their transportation witch sometimes they seem to need water to transportate to other places in their city.Any ways all of the videos were great, all of you did an awesome job!! (Medford - GC Thread ID 38573585 - Post 163)

✓ Hi Everyone!! XD The goal of our community action project is to raise up people's awareness of our water security and water footprint. The accomplishment we are most proud of is some students have started to take action by becoming vegetarians and stop wasting precious water resources. Our project impacted our community because students learn from our presentation that we need to avoid factory farms and start to use water efficiently. We can continue working on this issue in our city in the future by telling your friends and family about these facts and make our planet Earth a better place to live in. Finally, we really hope you guys can learn from our powerpoint and starting to take action! Best, K., C., A. (Shanghai - GC Thread ID 41165442 - Post 1156)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 49-GE	DEFINITION Seeking opportunities to communicate with people in other cities and cultures, as well as one's own			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Code when students are describing ways in which they have actually sought opportunities to communicate with people in other cities and/or cultures or with people in their own city/culture (e.g., attending events, reaching out to members of the community, etc.). This does not include asking online peers about their perspectives or ways of life (captured in 8-AD *Ability to ask questions when encountering different perspectives*), factual information about their city/culture (captured in 42-GE *Interest in the larger world, particularly unfamiliar people and places*), or about global issues (captured in 43-GE *Interest in global issues*). It also does not include students communicating with guest speakers or otherwise engaging in communication that was arranged by teachers, parents, or others and not initiated by the student/s. The emphasis is on students themselves seeking out opportunities to communicate. Code communication opportunities that students have sought out but not yet engaged in (e.g., saying they have looked into bringing in a guest speaker or asking another student to communicate with them outside of the discussion boards in the future). The distinction between this and 50-GE *Seeking opportunities to interact and collaborate with people of different cultures and backgrounds* is that 50-GE requires seeking out collaboration, which goes beyond the communication or simple interaction coded here.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Our community action project goal is to create awareness for the need to recycle and increase the level of recycling within our school and help reduce plastic waste. We will develop a website and create posters to bring awareness of the issue to our community. At the same time we are going to start collecting the plastic spoons that we use in the school's cafeteria everyday. We will create our very own mountain of plastic waste with the spoons collected to show our community how much plastic waste we are producing. We expect this visual model will persuade students to support efforts to eliminate non-recyclable spoons from our school cafeterias. Our long term goal is to petition MDCPS to substitute plastic eating utensils with eco-friendly ones in all MDCPS cafeterias. (Miami - GC Thread ID 40960708 - Post 998)

✓✓ Hello E., From nature to faucet was a great hands on experience. We got in touch with our local water supplier that did a school demonstration. It must have taken a lot of time and effort to get a presenter. Having someone with the experience to talk about water will give more detail and have a better connection than just reading. Knowing the quality of water should help you learn about how the water we use sometimes isn't the cleanest. My question to you, is your water above government standards? (Broward - Initial Review)

✓ Also I was wondering what time do you go to school? Also I was wondering what time do you go to school? maybe we can Skype sometime. (Broward - GC Thread ID 37984387 - Post 17)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 50-GE	DEFINITION Seeking opportunities to interact and collaborate with people of different cultures and backgrounds			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Describing ways in which one seeks opportunities to collaborate with people of different cultures and/or backgrounds. As with 49-GE *Seeking opportunities to communicate with people in other cities and cultures, as well as one's own*, the emphasis is on students themselves actually seeking out opportunities to collaborate in an activity with others (which could include, but is not limited to, solving problems with others' help or input). The distinction between 50-GE and 49-GE is that 50-GE requires seeking out collaboration, which goes beyond communication or simple interaction. Any mentions of seeking opportunities to collaborate with others are included, with the assumption that others inherently have different backgrounds (e.g., different race, ethnicity, religion, socio-economic status, family composition, etc.). This was a necessary assumption because students almost never stated that the people they were seeking an opportunity to collaborate with were of different backgrounds, so very little of their collaborative intentions would have been captured without this assumption.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ Hi Everyone, The goal of our Community Action Project was to clean the Biscayne bay area. **The accomplishment we are most proud of is bringing in other school sponsors so that they can participate in our awesome project. Our project impacted our community because it got the community more involved in the environment.** We can continue working on this issue in our city in the future by having many schools participate. Sincerely, Your friends in Miami L., T., J., and J. (Miami - GC Thread ID 40858930 - Post 1138)

✓ Hi my name is A., Something that surprised me in the videos was the marine debris and pollution. In the river next to to my city has a bunch of marine debris caused by littering which can cause habitat destruction and fish death. This can cause global water system pollution. Marine debris can trap animals, kill animals, make humans sick. The effect of it on my city is, if a fish that has plastic in it people can get that fish eat it and then the person/people eat that fish they will get sick. **We can prevent this from happening by creating volunteer groups and help. I will also be attending a "Water Matters Festival this weekend.** A. (Broward - GC Thread ID 40113671 - Post 709)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 51-GE	DEFINITION Gathering and interpreting information from people in one's own city and culture			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Describing the processes of collecting information and content of data/information collected from people in one's city or culture. This may include descriptions of carrying out surveys or interviews or what was actively learned during a site visit. This code does not include activities that do not involve engaging with other people, such as measuring or technical activities. This code is to be distinguished from 35-GK *Ability to apply research skills (finding, selecting, and applying information from multiple sources) to global issues*, which is about students finding information rather than generating their own. Do not apply the code if students are interpreting information from one another's posts on the platform as this is not commensurate with actively generating information. It is worth noting that other indicators capture when students ask questions or learn from one another, such as 8-AD *Ability to ask questions when encountering different perspectives*, and 7-AD *Ability to listen to others and discuss issues in a respectful and unbiased way*. Posts should be double coded with 41-GE *Ability to engage in inclusive problem-solving* when the information gathered is meant to help solve problems or includes solutions.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi everyone, The best part of doing the survey was that we got to hear about everyone's opinion in our community. We learned a lot about what they think the most important water issue is and why they think that. We also heard about what actions they would take to improve these water issues which we found really interesting. A challenge we experienced was the survey. We wanted to find a variety of people to ask, all with different ages so that their perspectives and opinions will be different which will make it more interesting and cause our graphs to vary which is a good thing. Some people also did not seem very interested in the survey, which was a little frustrating. Something surprising we learned from our survey was some people were not as aware of how bad these issues are all over the world. We also found out that out of 41 people we surveyed, 2 were already active sponsors of water foundations. We thought this was a good start, but with some persuasion and information, we could get more people in our community to sponsor water foundations. The water-related issue that is most important to people in our city is access to clean drinking water. We think this because water is something we rely on daily, and sometimes it could be taken for granted. Another important issue is the extreme weather. We think this because climate change is becoming more prominent and so extreme weather will become more of an issue. Our summers will be hotter and winters will be colder, and people will be affected by this.

We would like your feedback on the solutions we came up with. We want to know if they are easily maintainable and you think people would be mindful while hearing them and take them into consideration. Hope you like our infographic!
Sincerely, T., J., E., and H.

Click here for our infographic: [link] (Toronto - GC Thread ID 40611007 - Post 945)

✓✓ Dear peers, We learned about Everett's water system from the water superintendents Erine Lariviere and his assistant, Ralph Renzulli. Everett accesses its water from the Quabbin Reservoir and it travels 70 miles to get to Everett. I was surprised to learn that some pipes are over 100 years old. Also that they disinfect our water with chlorine, ozone, and other products to clean the chemicals. I can help my local water supply stay safe and clean by not using too much water, not wasting it, and not littering trash in the water. Sincerely, T. and P. (Everett - GC Thread ID 39359269 - Post 463)

✓ We just finished our survey and came up with a poster. We think we need to take some action to solve the water issue. (Taipei - GC Thread ID 40722691 - Post 919)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 52-GE	DEFINITION Gathering and interpreting information from people in other cities and cultures			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Describing the process of collecting information and content of data/information collected from people in other cities and cultures. This code is to be distinguished from 35-GK *Ability to apply research skills (finding, selecting, and applying information from multiple sources) to global issues*, which is about students finding information rather than generating their own. Note: Current Global Scholars assignments ask students to collect information from people in their own community (e.g., through surveys and interviews). This code will likely only be observed if new assignments are created that ask students to gather and interpret information from people in other cities and cultures. Posts should be double coded with 41-GE *Ability to engage in inclusive problem-solving* when the information gathered is meant to help solve problems or includes solutions.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ None Found

✓✓ None Found

✓ None Found

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 53-GE	DEFINITION Presenting information, formally and informally, to people in one's own city and culture		DEVELOPMENTAL COMPETENCY AREA Behavioral	

CODING INSTRUCTIONS

Sharing evidence from presentations of information or describing specific ways in which one is sharing or presenting information with other people outside one's classroom but within one's city and/or culture. Information includes self-reported observations or cited research but not opinions, anecdotes, or generalizations that students make. Both formal and informal sharing of information should be coded. Formal includes something like a prepared demonstration, speech, digital product, or workshop. Informal could be sharing through spoken or written conversation, including in the e-classroom. Code instances in which students mention teaching or talking with younger students about issues (e.g., pollution, food waste, recycling, water conservation strategies), conversations with school leaders to share results of research, conversations with neighbors or other community members, as well as the creation of websites, social media posts, posters or other information campaigns, and/or videos for the purposes of sharing information with people in their city or culture. Include mentions of information sharing/presenting in the past, present, and in the planning stages (e.g., "We will make a presentation for everyone in the school").

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ Hi Everyone, For our Community action project we have worked 2 classes together. in order to choose our goal we made a survey to choose our main concerns related to the main water issues that we have been working in the e-classroom during this year. 5th graders also helped us doing some presentations about the water cycle. We believe that it was very important to learn where water comes from so everybody realize its value. Our project focus on 4 issues: Water clean-up, water conservation, storm water and pastic waste. We belive that all the topics are related and are very important so we want to work with all of them but together. We started 4weeks ago by working in groups and brainstorming. We divided the topics and made groups so each group was in charge of one topic Each group became an expert in the issue they were working on. Also, inside the group M. (our teacher) gave us a role so now, everyone was in charge of something. The roles were the spokeperson, the writer, the journalist, the time keeper.... **Our goal was to inform to our neighbourhood and families about those issues and to find solution that everyone could implement. We to presented our impact by creating models and posters and presented them celebrating a "water party" that is something new that we wanted to do just for this occasion ,(we did it last week). Our families and the rest of students came to enjoy our presentations. Also a representative of our local city council came to the school. We were very happy. We made an imovie video that we're are going to share in our website Here youhave the link to our video [link] Your friends. (Barcelona - GC Thread ID 41172945 - Post 1163, also an example for 41-GE)**

✓✓ Hi Global Scholars, We are the Ambassadors, T. and A. Our community action goal is to try to prevent pollution by teaching citizens, and cleaning the area around the Mystic River. **One action we will do to take action is making posters to teach people what pollution does to the environment and how it can impactthem. These posters will be hung all around Medford. Achieving this goal will help our community because it will show people what they are doing to themselves and the environment around them.** A piece of advice we would like from our international peers is ideas on how to help our community. Thank you for reading this post! Sincerely, T. and A. (Medford - GC Thread ID 40937723 - Post 995)

✓ Hi E., Thank you for sharing your ideas with me. **My project is similar to mines because we both went around the school to tell the other students about the water problems.** I think your project is interesting because it sounds like you will get a lot of people to pay more attention to the water issues since you are make a game for it. I would like it if you could tell me more about how your game will turn out. I would love to Know. One recommendation I have for you is that you should and more facts about the water issues instead of just pollution and recycling. Sincerely,A. (Broward - GC Thread ID 40967459 - Post 1037)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 54-GE	DEFINITION Presenting information, formally and informally, to people in other cities and cultures			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Sharing evidence of presentations of information or describing specific ways in which one is sharing or presenting information with other people in other cities and/or cultures. Information includes self-reported observations or cited research as well as statements presented as facts, even if a source is not cited (e.g., "This tradition started in the 1800s."). Information does not include personal opinions, anecdotes, or generalizations that students make. Both formal and informal presentation of information should be coded. Formal presentation includes something like a prepared demonstration, speech, digital product, or workshop. Informal presentation includes creating and displaying informative posters or sharing through spoken or written conversation, including in the e-classroom. Include mentions of information sharing/presenting in the past, present, and in the planning stages (e.g., "We will make a presentation for people in our sister city."). Sharing information online without specifying that it is targeting the local city or culture is considered presenting information to people in other cities and cultures, given the global nature of online information.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

- ✓✓✓ Hello fellow students, our Global Scholars CAPis focused on spreading the knowledge of hidden water. What we did to spread this knowledge, wecreated a website, an instagram account, and alsoa twitter account Sincerely, R.,D.,R.,S.,J.,T.,R. (Medford - GC Thread ID 41118261 - Post 1101, also an example for 48-GE)
- ✓✓ Hello my intentionalpeers, we had fun learning about the differentwater flow and about our gpm and our water footprint. Wehope you enjoy our video. Our goal is to share this video to other and start a water awareness campaign. I., M., G., I., A. M. (Broward - GC Thread ID 39035084 - Post 359)
- ✓ Hey guys! It's really great to join a project with all of you, because I never work with so many peers all around the world. I learned a lot of information about water all of the world, and even done many videos to spread our thoughts to the world. It really gave me a great sense of achievement. Thank all of you around the world. Best wishes from Taipei, J. (Taipei - GC Thread ID 41052390 - Post 1179, also an example for 55-GE)

Codebook for Global Student Learning Outcomes

Appreciation for Diversity		Cultural Understanding	Global Knowledge	Global Engagement
INDICATOR 55-GE	DEFINITION Working to contribute to local, regional, or global improvement			DEVELOPMENTAL COMPETENCY AREA Behavioral

CODING INSTRUCTIONS

Describing projects or actions that have been or are currently being implemented and that seek to resolve issues at the local, regional, or global levels (“I/we have...” or “I/we are doing...” statements, as well as more implicit references to actions taken). It should be clear that the actions are in progress and not just vague plans. Code where it is clear that the student has been involved in taking action to contribute to issues. In other words, do not code cases such as, “In our city, we try to use less fossil fuels” unless the student indicated that they, too, were engaging in actions to use less fossil fuels. Do not include students’ research projects as contributions to improvement. The student must have taken action (or be currently taking action) to address a global issue.

Descriptions of actions taken or underway are distinct from expressions of interest, willingness, and responsibility (“I/we will”), which should be coded as 47-GE *Willingness to take action to address global issues* and from “I/we can” statements, which should be coded as 45-GE *Recognizing one’s capacity to advocate for and contribute to local, regional, or global improvement*. Students naming their accomplishments (e.g., “The accomplishment we are most proud of is...” or “Things we accomplished so far are...”) should be double coded as 55-GE and 45-GE.

EXAMPLE(S) OBSERVED IN DISCUSSION BOARD

✓✓✓ Strong ✓✓ Average ✓ Minimum

✓✓✓ We are excited to share our Community Action Project with you. Our goal was to create a fun way to teach our community how to recycle and how to reduce wastewater from running into our waterways. We are very happy to say that we think everyone learned a lot and had fun. We created a stencil and then used it to paint the catch basins around our school. We did this to make students more aware and to educate the school community that they should not litter. In addition, we created a game and informational app to help educate our school population. We used MIT App Inventor to build the app. We hope you enjoy our google slide show. Click the link below... (Everett - GC Thread ID 41166236 - Post 1127)

✓✓ Dear peers, A water footprint is the amount of fresh water a person uses each day. Knowing our water footprint is important because we need to be aware of how much water we use. We must conserve water or we may waste too much. There are two types of water, actual and virtual. Actual water is water that is actually visible like showering, bathing, etc. Virtual water is water that is hidden in different products such as, bagels, donuts, etc... Using a water calculator, I used 1,371 gallons/5190 liters per day, without noticing how much water I wasted. So, I made certain strategies to conserve water, such as being water wise. For example, I would turn off the faucet/sink while I’m brushing my teeth, or take a shorter shower, so this will lower the number of gallons I use a day. Conserving water will help us in the future needs, such as future droughts Sincerely, N. (NYC - GC Thread ID 38872835 - Post 307, also an example for 32-GK)

✓ Hey guys! It’s really great to join a project with all of you, because I never work with so many peers all around the world. I learned a lot of information about water all of the world, and even done many videos to spread our thoughts to the world. It really gave me a great sense of achievement. Thank all of you around the world. Best wishes from Taipei, J. (Taipei - GC Thread ID 41052390 - Post 1179, also an example for 54-GE)



Appendix

Research Approach

The Global Scholars virtual exchange program was created to help students develop global competency by connecting with peers worldwide. Guided by an original project-based curriculum, students ages 10 to 13 in cities around the world communicate and learn together in asynchronous discussion boards as they study and design solutions to global problems. From its inception, the mission of Global Cities, Inc. has been to test the effectiveness of the Global Scholars model.

Foundational Student Learning Outcomes

A milestone in our evaluation work was identifying the learning outcomes necessary to achieve global competency. In 2016, with input from our international network of educators, social science researchers, and the literature on global learning, we identified four global learning outcomes: Appreciation for Diversity, Cultural Understanding, Global Knowledge, and Global Engagement. To make these outcomes easier to teach and observe, we developed 55 empirical indicators across the developmental competency areas of knowledge, skills, attitudes, and behaviors. Global Cities also identified five general learning outcomes and 57 empirical indicators that support students' global competency development: Digital Literacy, Language Communication, Self-Efficacy, Academic Engagement, and Critical Thinking. Because the global outcomes have been the subject of limited study, our research on student learning in discussion boards focused on the four global learning outcomes rather than the five general learning outcomes.

Once we defined global competency in terms of learning outcomes and developed empirical indicators of those outcomes, we recognized there were few existing tools to measure them, particularly in an e-classroom environment. We needed to develop a new tool to capture the specific ways that students demonstrate global competency indicators. We were able to do this by creating a codebook that uses the text of student discussion board posts and replies as data. With this tool we can determine whether students are learning, what they are learning, where in the curriculum they are learning, and how they are learning.

Learning from Students: Discussion Board Data

In 2019, we partnered with Out of Eden Learn (OOEL), an initiative of Project Zero at Harvard Graduate School of Education, to develop and test a prototype for coding student writing for evidence of our four global learning outcomes. This codebook was successfully used by OOEL and Glass Frog Solutions, an evaluation research firm, to analyze evidence of learning in our e-classrooms.

The data for our analysis was discussion board posts and replies from the Global Scholars curriculum for 2018–19, which focused on water pollution and conservation. The posts and replies in the e-classroom discussion boards serve as unique primary texts for students to learn about life in other cities, the worldwide impacts of global problems, and how to develop solutions that meet local needs and will have long-term impact. These posts and replies also serve as an important record of student learning in progress.

The Sample

Our research sample included a total of 1,167 posts and replies written by students from 17 cities in 12 countries.⁸ Global Cities and OOEL developed the sample by first selecting three of the 51 e-classrooms to study. Each e-classroom included 8–10 classes in different cities around the world. One e-classroom was chosen based on its high level of discussion board activity. The other two were chosen because they included classes whose work had been the focus of previous data collection, including classroom observations and reflective

⁸ All data are from archived Internal Report, Harvard Graduate School of Education's Out of Eden Learn (OOEL), May 27, 2021.

assessments. The next level of sample selection was posts and replies. To ensure the data reflected the program as a whole, OOEL used four criteria to construct the sample. The posts and replies needed to: originate from every assignment in the curriculum, occur at varied times during each assignment, represent every school in the e-classroom, and include posts that did and did not receive replies. Where a post received more than one reply, nearly all replies were included to maintain the integrity of the conversation, with each reply counting as a separate unit. Replies that were brief, trivial, or copied from other students were excluded. This sample size was large enough to capture significant statistical variation, but small enough to allow for in-depth analysis.

From Theoretical Constructs to a Tool for Evaluation

Using the Global Cities' student learning outcomes framework, OOEL began the research by closely examining 200 posts and writing initial instructions for identifying evidence of the 55 target indicators of global learning. OOEL then used these initial instructions to code all 1,167 posts in the sample, engaging in an iterative process to refine the instructions until the final codebook was produced.

There were many instances in which evidence of multiple indicators was found in a single post. Several types of indicators were challenging to distinguish. In some cases, multiple indicators address similar concepts but call for a different level of demonstration, such as "awareness" versus "understanding." Other challenges included defining what constitutes positivity, tolerance, and a "different background." Global Cities collaborated continuously with OOEL to clearly differentiate the indicators. By systematically refining coding instructions for every indicator, we made it easier for other researchers, program designers, and educators to use the codebook to make these distinctions and identify evidence of student learning in other settings.

Codebook Refinement and Testing

To test the reliability of the codebook, Global Cities engaged Glass Frog Solutions to analyze the same sample of student work using the codebook and to compare their results to those of OOEL. Wherever there was a significant discrepancy, OOEL, Global Cities, and Glass Frog reviewed it. In some cases, the coding instructions for an indicator were edited for clarity. In other cases, new student work examples were selected that more clearly aligned with an indicator's coding instructions. For all indicators, examples were added to illustrate three levels of complexity—minimum, average, and strong—providing further guidance on how to code global learning outcomes. To test the final codebook with these modifications, in October 2021 Glass Frog conducted another test, in which a new set of coders applied the fully revised codebook to a subset of 140 posts from the original sample and found strong agreement across the 55 indicators. The iterative process of testing and refinement improved the reliability of the codebook. This is particularly important because there has been very little research on developing tools to assess global learning outcomes. The codebook was intentionally developed as a tool to enable researchers, program designers, and educators to recognize each of the indicators in student work from any K–12 curriculum.

EXECUTIVE SUMMARY

In today's world, engaging in respectful and constructive dialogue with individuals from many countries and cultures, understanding complex global problems, and working to solve them collaboratively are clearly important priorities. We urgently need a better understanding of how to teach these competencies to children from a young age. Key to addressing this challenge is being able to identify what students need to know to become globally competent adults and creating tools to guide and measure their progress.

Through our research, we identified empirical indicators of global learning outcomes and developed metrics for their evaluation. We analyzed discussion board data from Global Scholars e-classrooms and found strong evidence that students ages 10 to 13 are demonstrating critical global competencies that are both hard to learn and hard to measure.

The Global Scholars Model: Lessons from the e-Classroom

Global Scholars was created and is operated by [Global Cities, Inc.](#), a Program of Bloomberg Philanthropies, to help students around the world develop global competency. The goal of global competence education is to prepare students with the knowledge, skills, attitudes, and behaviors they will need for life in an increasingly interconnected world.

Since 2013, this pioneering digital exchange program has provided unique opportunities for global competency learning by connecting students ages 10 to 13 to peers in cities across the globe, and educators to colleagues worldwide. Cumulatively, more than 90,000 public-school students from 110 cities in 37 countries have participated, with 40 percent of enrollment in the U.S. and 60 percent international.

Sustained, direct peer connections among students around the world provide the cornerstone for our model's key elements: a project-based curriculum focused on a global issue and linked to specific learning outcomes, authentic assignments grounded in firsthand observation, a digital environment for practicing communication skills, and professional development for our teachers. Students

exchange ideas weekly in e-classroom discussion boards as they research and develop sophisticated solutions to a global problem and then take action where they live.

We have seen firsthand that digital interactions among adolescents are an incomparable motivator, making the world smaller and the local classroom larger and more diverse by connecting students who share the experience of living in urban areas. But in order to better understand the progress Global Scholars students were making, we needed metrics for evaluating global competency learning.

In the global education field, there are few established learning outcomes that are sufficiently articulated for measurement. Therefore, our first task was to conceptualize global competency in terms of nine clearly identified [learning outcomes](#). The process of developing these learning outcomes involved feedback from our international network of Global Scholars educators, input from social science researchers, and the literature on global learning.¹ The outcomes include the four global student learning outcomes that are the focus of this report: Global Engagement, Appreciation for Diversity, Global Knowledge, and Cultural Understanding.

¹ Tiven, M. B., Fuchs, E. R., Bazari, A., & MacQuarrie, A. (2018). *Evaluating Global Digital Education: Student Outcomes Framework*. New York, NY: Bloomberg Philanthropies and the Organisation for Economic Co-operation and Development.

With a clear understanding of global competency and identifiable learning outcomes, our interactive, student-centered digital exchange model was designed to promote student development in these domains. From the very beginning, participating educators shared continuous feedback on their experiences. It was their contention that sustained, direct peer connections drive learning and promote student engagement—early evidence that our model was working. We further observed that the posts and replies in the Global Scholars e-classroom discussion boards reflected what students were learning. As students move through our nine-month curriculum, they use the discussion boards to exchange observations and ideas about a global problem and learn how their peers worldwide understand and confront similar challenges.

While global competency learning is often considered difficult to evaluate, our research shows that global competency can be empirically identified and systematically measured using data from e-classroom discussion boards. In the Global Scholars e-classroom, student conversation both drives discovery and serves as evidence of learning.

Developing a Successful Methodology for Evaluating Global Learning

Global Cities' goal from the outset was to test this model of global digital exchange. We had one overriding research question: What is the evidence that learning is taking place in Global Scholars e-classrooms? We developed a methodology to identify the learning students demonstrate in discussion boards, and successfully used it to evaluate learning in the Global Scholars program. This report is grounded in three pillars of our evaluation work: identifying what students need to learn in order to become globally competent adults; demonstrating how we teach these outcomes to students ages 10 to 13; and analyzing student posts and replies on Global Scholars discussion boards to gather evidence of this difficult-to-measure learning.

In 2019, in partnership with Out of Eden Learn (OOEL), an initiative of Project Zero at Harvard Graduate School of Education, we developed and tested an original methodology for coding discussion board data, based on our four global student learning outcomes: Global Engagement, Appreciation for Diversity, Global Knowledge, and Cultural Understanding. We were seeking evidence that students were demonstrating these learning outcomes—specifically, what aspects of global learning were they demonstrating, how frequently, and at what point in the curriculum progression? Underlying these questions was a larger one: what aspects of the program model appeared to drive student learning?

We answered these research questions by analyzing demonstrations of the 55 empirical indicators of our four global learning outcomes. The data for our study was a sample of 1,167 discussion board posts and replies, written by students from 17 cities in 12 countries. The sample was taken from approximately 111,000 posts and replies created by 15,698 students during the 2018-19 program year.

The Global Scholars curriculum emphasizes learning outcomes that are inherently challenging to measure. The work of distinguishing these indicators in student writing is complex and requires careful attention to nuance. The 55 indicators provide the means to connect theoretical constructs (the four global learning outcomes) to empirical data (posts and replies in the discussion boards). The indicators make it possible to find empirical evidence of the global student learning outcomes; the codebook we created provides a practical tool to identify this evidence in student conversation and writing. Using this tool, we were able to measure the extent to which learning was taking place in Global Scholars e-classrooms. While rigorous in design and application, this is a categorically different way to evaluate learning than a standardized test with multiple-choice questions.

The codebook provides instructions and illustrative examples that enable educators, researchers, and program designers to recognize these indicators in student posts and use this tool to guide and evaluate global competency learning. The codebook is a tool that makes it possible to capture evidence of learning in progress by looking carefully at students' own words. And it allows us to answer our most important question: yes, students are learning in Global Scholars e-classrooms.

By coding the sample of posts and replies, we produced a dataset that could be analyzed for evidence of student learning across the four global learning outcomes: Global

Engagement, Appreciation for Diversity, Global Knowledge, and Cultural Understanding. OOEL's analysis of this data found evidence of all four global learning outcomes, determined what aspects of global competency were demonstrated most frequently by students, and identified the stages in the curriculum when this occurred. The analysis also revealed important connections among the knowledge, skills, attitudes, and behaviors that students were demonstrating. These patterns provide insight into why this learning was occurring and point to elements of the curriculum and program design that drive student growth in these learning outcomes.

What Students Learned

Global Engagement:

Students were interested in global issues and recognized that they can change the world.

Global Engagement was the most prevalent of the four global learning outcomes, and the attitude *Interest in global issues* was the most prevalent of all 55 indicators. Also prevalent were attitudes related to student agency, demonstrating that students both recognized they were able to make a difference and showed they were willing to act on that understanding.

Appreciation for Diversity:

Students around the world showed they can interact with one another respectfully, inquisitively, and substantively.

We found high prevalence of three indicators related to constructive dialogue across differences. Students displayed these competencies consistently over the course of the year, demonstrating that they were not just learning in the abstract how to communicate respectfully with each other, but were applying these skills.

Global Knowledge:

Students recognized the importance of learning about global issues when they engaged with peers worldwide.

They exchanged observations about their lives and cities with peers in the e-classroom. Their posts included vivid descriptions of local geography that their global peers used to learn about world geography. Later in the year, as students examined the topic through a global lens and took action in their own communities, they demonstrated a progression in learning, from simple knowledge to a recognition of the importance of that knowledge, laying the groundwork for ongoing growth.

Cultural Understanding:

Students learned to appreciate the cultures of others by first reflecting on the many cultures to which they belong and then exchanging views in discussion boards.

Evidence of Cultural Understanding was found in every discussion board despite the recognized challenges of teaching and learning this concept. The most prevalent Cultural Understanding indicators, *Positive attitude towards other cultures* and *Understanding of one's culture* are directly connected to the Global Scholars digital exchange model, in which students first reflect on their own cultures and then read and reply to peers' discussion board posts to learn about similarities and differences worldwide.

How Students Learn

The analysis showed relationships between learning outcomes and among empirical indicators within learning outcomes, which provided insights into how students learn global competency.

Curiosity about the topic and one another are mutually reinforcing.

The Global Scholars curriculum was designed with the expectation that communicating with peers worldwide about global issues would increase student interest in these issues and that, in turn, interest in global issues would motivate further conversation. The discussion board data supports this approach. The Appreciation for Diversity skill *Ability to listen to others and discuss issues in a respectful and unbiased way* appeared in the same posts as the Global Engagement attitude *Interest in global issues* in 148 out of 295 posts. This data pattern suggests that student interest in an engaging topic and in one another are mutually reinforcing.

Appreciation for Diversity and Cultural Understanding are interrelated.

Global Cities expected a strong relationship between Appreciation for Diversity and Cultural Understanding. We created four pairs of knowledge indicators that address the same concepts, but at different levels—the simpler “awareness” for Appreciation for Diversity and the more complex “understanding” for Cultural Understanding. The analysis showed that these pairs often appeared in the same discussion boards at different levels of prevalence. For example, a relatively low prevalence indicator of Cultural Understanding, *Understanding of one’s culture*, frequently appeared in the same discussion boards as a higher-prevalence indicator of Appreciation for Diversity, *Awareness of one’s culture*. This pattern provides evidence of the important relationship

across outcomes and suggests how students learn Cultural Understanding—that it develops in tandem with Appreciation for Diversity but is more difficult to teach and learn.

Positive student attitudes about taking action lead to positive behaviors.

Relationships among indicators within the same outcome also provided important lessons, such as the notable overlap of attitudes and behavior related to taking action on global issues. This tracks with our curriculum progression—students build positive attitudes by first observing a global problem, and then having the opportunity to tackle it hands-on. The data indicate that this is exactly what happened during the culminating community action project, which gave students the rare chance to carry out their own plan to improve the world. In addition to recognizing they could make a difference and showing they were willing to do so, students demonstrated the behavior *Working to contribute to local, regional, or global improvement*. Notably, 81 percent of the 100 posts coded for this behavior appeared during this final unit, showing that students successfully translated their positive attitudes into actions.

Why Students Are Learning

The research shows that the Global Scholars digital exchange model successfully teaches global competency and points to the program elements that appear to drive student learning.

Sustained international peer connections through e-classroom discussion boards motivate students to learn.

In Global Scholars e-classrooms, students communicate with classmates in 8 to 10 geographically diverse cities. They start by observing the problem they are studying in their own schools and neighborhoods, collaborating with local classmates to conduct research and develop solutions. Then, exchange with peers provides a global perspective—students are interested to hear what classmates around the world are observing and ask questions to find out more. A post from Barcelona elicited a response from a student in New York City that illustrates this enthusiasm.²



NYC.Student

"Dear Global scholar, I really like how your water activity is helpful for your health and I think that it is very cool. One question I have for you is do the singers and instrument players play while you watch the water. Thank you for sharing such a cool culture of yours I hope you can get back to me. Sincerely, M."

Curricula are intentionally linked to global learning outcomes.

Within the curriculum, each of the five units is designed to teach certain indicators of our global learning outcomes, which students continue to develop over the course

of the year. Our curriculum materials and professional development sessions show educators how this intended learning is linked to specific curriculum activities, and what this learning looks like in the e-classroom.

A focused real-world topic facilitates student learning.

The Global Scholars curriculum focuses on a single global problem, giving students something to talk about that they all have in common. For example, students gain a hands-on understanding of the complicated subject of water use and waste when they conduct a school water audit and compare the results with peers in cities worldwide. They discover similarities and differences in the challenges their cities face and the resources available to address them. This is exciting for students who are 10 to 13 years old—and they engage deeply with these challenging topics.

Ongoing professional development contributes to teacher effectiveness.

It takes trained teachers to make this approach successful. Global Scholars educators participate in ongoing videoconference professional development focused on our project-based, interdisciplinary curriculum, the student learning outcomes it is designed to teach, and how to guide and supervise communication in e-classroom discussion boards. These highly interactive sessions also provide direct peer connections for teachers, who discuss effective classroom practices and observations of student learning. These teachers are gaining pedagogic skills needed to teach any challenging global problem and to guide and evaluate student progress in an online environment.

² Students' words are presented as posted in discussion boards except where identifying information has been removed.

Looking Ahead

Educators and policymakers must promote the power of global digital exchange and the promise of teaching global competency.

Getting students ages 10 to 13 to want to learn about complex global problems, and to want to change the world, is a significant achievement. Throughout the Global Scholars learning journey, our analysis showed that sustained, direct peer connections reinforced student interest in global issues, leading them to recognize the importance of learning about these issues and their own ability to change the world. Global Scholars has also been successful in teaching students to appreciate diversity and to understand cultural differences.

These findings are significant for addressing the challenges of today's world. Given the global nature of current political and environmental challenges, as well as the interconnectedness of the world's economies, it is more important than ever that students learn to interact with people from different countries and cultures and to appreciate differences. Students also need to learn to collaborate to address complex global issues.

There is general agreement that students should be learning to become globally competent adults, but the outcomes associated with global competency have been considered difficult to define, teach, and measure. By articulating the student learning outcomes that constitute global competency, demonstrating how these outcomes can be taught through asynchronous discussion board communication, and developing an innovative approach to evaluating progress, we have shown that this work is not only desirable but achievable. Our findings show how educators can teach these global learning outcomes using a structured curriculum and direct peer connections, and how students can demonstrate growth in global learning on a digital platform.

We have no doubt that curiosity about students from other countries and an international audience for assignments make digital exchange the key to successful student and educator engagement. We urge education leaders and policymakers to prioritize direct peer connections to teach global competency and to make these opportunities accessible to all students. Discussion board technologies, which are both affordable and impactful, should be considered by both existing and newly developed global education programs. We invite our peers to use Global Cities' student learning outcomes and indicators, the codebook, and the evaluation framework to create and study the impact of new global competency curricula and digital exchange program models.³

³ To participate in demonstrations of our codebook for global student learning outcomes, contact [Global Cities, Inc.](#)

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— MBT



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