

Going Global With Project-Based Inquiry: Cosmopolitan Literacies in Practice

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Project-Based Inquiry Global is a collaborative inquiry process that guides students in reading, writing, creating, and taking action across time, space, and cultures to address enduring global challenges.

Our generation isn't prepared for the future; our generation is shaping it. (Nick, a high school student; all names are pseudonyms)

Nick, a participant in Project-Based Inquiry (PBI) Global, expressed the energy and transformation that he experienced during a collaborative inquiry project on global water and sanitation issues. The PBI Global initiative grew out of our question, How do we engage students to be local and global agents of change? From this question, we have explored how collaborative inquiry, specifically PBI (Spires et al., 2009; Spires, Hervey, Morris, & Stelpflug, 2012; Spires, Kerkhoff, & Graham, 2016), could be adapted for a global context.

Recently, we facilitated PBI Global to explore the sundry ways that students are motivated to transform their local and global environments (Spires, Kerkhoff, & Fortune, 2018; Spires, Paul, Himes, & Yuan, 2018). In these studies, we found that students and teachers engaging in PBI Global experienced growth in educational cosmopolitan outlooks to varying degrees. Specifically, teachers became “actively involved in constructing themselves rather than being [solely] acted upon in the midst of a change process” (Spires, Kerkhoff, & Fortune, 2018, p. 16). With students, the development of educational cosmopolitan outlooks was tied to explicit global connections facilitated by the teacher during the project, such as setting the expectation for students to design “compelling questions that necessitate a comparative cross-cultural response” (Spires, Paul, et al., 2018, p. 39).

In this theory-into-practice article, we clarify what PBI Global is through the theoretical lens of cosmopolitan literacies. We then explain the PBI Global process, its design features, and lessons learned in order for educators to implement the process in their classrooms.

Theoretical Underpinnings of PBI Global

PBI Global is based on the theories of cosmopolitan literacies. Specifically, we draw from educational cosmopolitanism (Hansen, 2008; Wahlström, 2014) and transliteracies (Stornaiuolo, Smith, & Phillips, 2017; Thomas et al., 2007). Educational cosmopolitanism offers a worldview that helps reconcile the tensions in contemporary classrooms regarding local versus global and old versus new. Teachers with an educational cosmopolitanism stance

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balance loyalty to tradition and openness to the new (Hansen, 2011) from ethical (Beck, 2006) and critical frames (Delanty, 2009). Indigenous knowledge and cultural background are not easily dismissed for new beliefs; rather, new beliefs are given consideration and critical thought. Nussbaum (2002) added that “to be a citizen of the world one does not need to give up local identifications, which can be a source of great richness in life” (p. 2). Identity and culture are seen as fluid and dynamic, where students can adopt new identities as global citizens without sacrificing local ethnic, indigenous, racial, religious, or other cultural identities. Teachers with an educational cosmopolitan stance encourage hospitality to new people and caring about others, whether local or global (Appiah, 2008). Educational cosmopolitanism emphasizes equity in international partnerships and having students critically reflect on stereotypes and power relationships. Students share perspectives with diverse others in ways that involve giving and taking (Wahlström, 2014).

Teachers with a transliteracies stance consider literacy a social practice and foster multimodality, translanguaging, and transculturalism. Transliteracies builds on multiliteracies (New London Group, 1996) and New Literacy Studies (Street, 2003), underscoring the fluid nature of literacy, language, and culture. Transliteracies offers “a change of perspective away from the battles over print versus digital, and a move instead towards a unifying ecology...of all literacies relevant to reading, writing, interaction and culture” (Thomas et al., 2007, para. 5). The *trans-* prefix deconstructs the false hierarchy that privileges some literacies above others.

When cosmopolitan literacies are put into practice, students communicate, collaborate, and learn with and about people in other parts of the world. These processes require students to enlist multiliteracies centered around what Hull and Stornaiuolo (2014) referred to as “the cognitive, emotional, ethical, and aesthetic meaning-making capacities and practices of authors and audiences as they take differently situated others into account” (p. 17). We drew on this idea to explore how students can use inquiry learning to reflect on global challenges and reflexively examine themselves and their cultural perspectives in an effort to engage in praxis to transform our world (Freire, 1970). Combining inquiry-based instruction with cosmopolitan literacies allows students to address significant social issues at the local and global levels through our particular pedagogical approach called PBI Global.

Why Engage in PBI Global?

The PBI Global model builds on extant literature in inquiry- and project-based learning (see Spires et al.,

2012). Whereas numerous models exist for inquiry learning within and across disciplines, such as the 5Es instructional model (Bybee & Landes, 1990), the C3 Teachers Inquiry Design Model (Grant, Swan, & Lee, 2017), and the International Baccalaureate inquiry process (Li, 2012), PBI Global contributes an explicit non-proprietary model relating inquiry-based learning and critical, digital, and global literacies.

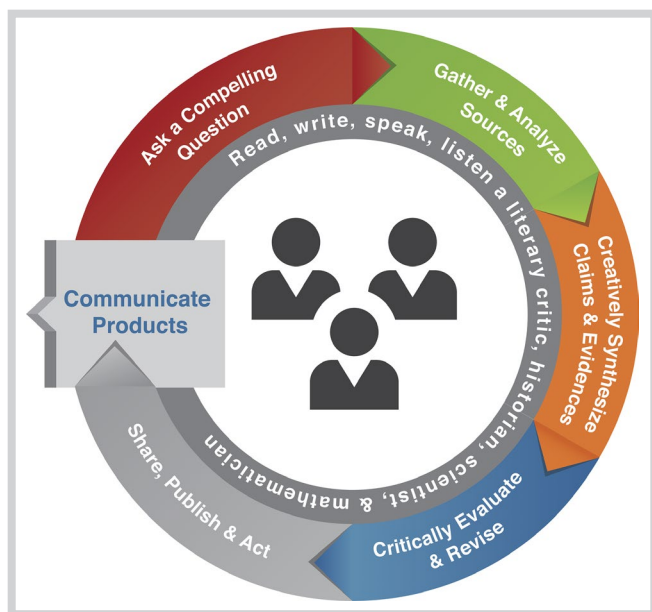
The global aspect of PBI is important for two reasons. First, engaging students in global issues enables them to become partners in solving the enduring challenges of our time (OECD, 2018). As part of their global mission, the United Nations (n.d.) adopted 17 Sustainable Development Goals for all countries to work toward by 2030; the goals target ending all forms of poverty, fighting inequalities, and tackling climate change, among other challenges. Our aim is to encourage teachers and students across disciplines and grade levels to focus on these compelling challenges that the United Nations set forth. In doing so, the outcome could be a generation who has expertise and passion for global problem solving.

Second, having students learn to collaborate across time, space, and cultures could help them develop cosmopolitan literacies vis-à-vis Wahlström’s (2014) four attributes—self-reflexivity, hospitality, intercultural dialogue, and transactions of perspectives—as they proceed with college, careers, citizenship, and community involvement. When working interculturally, students consistently engage in self-reflexivity as they encounter intersections of their cultural predispositions and the culturally unfamiliar. Furthermore, students must be hospitable, creating space for each culture to be included (Spires, Kerkhoff, & Fortune, 2018). Working with others from around the world creates opportunities for intercultural dialogue and transactions of perspectives as meanings are negotiated and new ideas are generated (Spires, Paul, et al., 2018).

How Can Teachers and Students Engage in PBI Global?

Through the five iterative phases of the PBI Global process (Spires et al., 2016; see Figure 1), students have the opportunity to embrace learning with cosmopolitan literacies. For example, from a hospitable stance, open to the new, students ask a compelling question of global significance. They gather and analyze sources from multiple perspectives and creatively synthesize claims and evidence by inserting themselves into an intercultural dialogue. Practicing self-reflexivity, students critically evaluate and revise their multimodal digital

Figure 1
The Five Phases of PBI Global



Note. The color figure can be viewed in the online version of this article at <http://ila.onlinelibrary.wiley.com>.

products and engage in transactions of perspectives through sharing, publishing, and acting with a global audience.

From a pedagogical standpoint, PBI Global begins before the five phases as teachers design instruction. In this section, we draw on the example provided by Ms. Bianchi, an 11th-grade English teacher in the Southeastern United States, to illustrate PBI Global in action, which includes connections to cosmopolitan literacies. Her students' inquiry projects focused on Sustainable Development Goal 6, ensure access to water and sanitation for all (United Nations, n.d.).

Design

There are six design features involved in preparing for PBI Global (see Figure 2). The features are curriculum alignment, project duration, student autonomy, the nature of collaboration, student products, and instructional supports.

We know that teachers have numerous demands on their time. Therefore, during the planning phase, teachers must take into consideration the many factors influencing their classrooms (e.g., student learning needs, content standards, curriculum pacing, content relevancy). Choices regarding design features afford teachers the flexibility to fit the needs of diverse classroom contexts.

Curriculum Alignment. To begin designing a PBI Global, teachers should consider their curriculum and standards, as well as a global issue of social significance that connects to these instructional drivers. Ms. Bianchi chose to align the PBI Global with her standards for research and argumentative writing. Moreover, the Sustainable Development Goal of access to water and sanitation (United Nations, n.d.) connected directly with her 11th-grade students' investigations of local water sources and natural resource-based conflicts in their other classes. As a result, students had the background knowledge needed to develop complex arguments during the PBI Global process.

We recommend beginning with a common read about the project's chosen global theme. A variety of text types and genres could serve this purpose, including digital and print news articles, short stories, novels, and autobiographies. Ms. Bianchi selected the novel *A Long Walk to Water* by Linda Sue Park to spark students' interest in the topic. Incorporating books with adolescent characters from other cultures is one method that teachers can implement to foster empathy and understanding across difference, which are elements of a cosmopolitan outlook. For Ms. Bianchi's students, interacting with *A Long Walk to Water*'s dual narrative of Salva and Nya created space for a more complex and humanized understanding of the intersections of clean water, health, and political conflict in South Sudan. In addition, students were able to participate in reflexivity by examining gender, as the narrators are a boy and a girl. The two narrators experience access to water and political conflict differently because of their gender identities.

Project Duration. Teachers must also determine the intended duration of the PBI Global based on instructional goals, classroom context, and complexity of the topic. For example, will the PBI Global last for a week or multiple weeks? Ms. Bianchi's project on global water and sanitation issues lasted six weeks, with students meeting three days weekly per the school's block schedule. During these class blocks, students typically worked in their teams for 60 minutes, and the remaining 30 minutes were dedicated to teacher-led lessons and/or formative assessments that connected to the project goals and curricular expectations.

Student Autonomy. Determining project duration and student autonomy go hand-in-hand when designing PBI Global. Generally, the more autonomy students are given, the longer the project will last, as learners will need added time to make well-informed decisions.

Figure 2
The Six Design Features of PBI Global



Note. The color figure can be viewed in the online version of this article at <http://ila.onlinelibrary.wiley.com>.

Complexity of PBI Global tends to increase with greater student autonomy. Each phase of the PBI Global process can fall along the continuum of student-directed, student-teacher-negotiated, and teacher-directed. Because Ms. Bianchi's students had prior experience in designing inquiry questions, she decided that her students would develop their own compelling questions with instructional supports (i.e., a class-generated list of water- and sanitation-related subtopics). One group researched the question, "How are communities dependent on resource management to ensure equitable access to food and water?" Another group researched the question, "How does access to clean water and adequate sanitation impact women's health?"

It is important to note that student choice within PBI Global and the project's collaborative nature often serve as motivational tools. As Leila, one of Ms. Bianchi's students, affirmed, "Since we complete PBI Global collaboratively, students can lead portions of the project that they are passionate about." Thus, when making decisions regarding student autonomy during PBI Global, consideration should be given to how greater or lesser autonomy may impact student motivation.

The Nature of Collaboration. Another aspect of complexity within PBI Global is the nature of collaboration. For students to be able to engage in intercultural dialogue and transactions of perspectives, they need to collaborate cross-culturally. Teachers must consider the boundaries and depth of collaboration. Of particular importance is ensuring that there is a richness of multiculturalism so each group can experience transactions of perspectives. Teachers can consider having students collaborate with international experts or students from other classes, locally or globally.

Ms. Bianchi facilitated intercultural dialogue by bringing experts on global water and sanitation issues from different countries into the classroom virtually and in person to work with student groups. Students consulted with a civil engineer from the Philippines, a waterborne disease specialist from Australia, and a representative from the organization Water for South Sudan. To prepare for discussions with culturally diverse experts, students reviewed the experts' online biographies and published research. Students also explored the issue of global water and sanitation in the context of the experts' regions of origin and then submitted questions. The experts used the student-generated questions to structure their verbal and visual presentations.

In general, PBI Global teams are composed of three to five students, based on the prescribed workload for

the project. Ms. Bianchi's students self-selected their teams and then chose a specific role (i.e., facilitator, research lead, writing lead, visual lead). The facilitator was the overall group leader who managed deadlines and communication among the team, the coach, and the teacher. The research, writing, and visual leads were responsible for directing a particular PBI Global product (i.e., the research lead spearheaded the annotated bibliography, the writing lead the Claims Sheet, and the visual lead the multimodal digital product). Being a lead, however, did not mean that the person was the only one working on a specific product; a lead's role was to coordinate daily working arrangements toward completion of a product.

Connecting classrooms internationally increases complexity for project design, implementation, and extension. Time differences and technological connectivity can make collaboration—synchronous and asynchronous—more challenging. Nevertheless, cross-cultural interactions allow students to engage in intercultural dialogue and transactions of perspectives while also developing the cosmopolitan attribute of self-reflexivity. Akila, one of Ms. Bianchi's students, shared her emerging cosmopolitan outlook while working with a global water and sanitation expert from the Philippines: "Dr. Ocampo made me think about sanitation in a whole new way. I've lived with indoor plumbing my whole life...and never really thought about how [toilet] pits are emptied and how dangerous that could be." With previous PBI Globals, Ms. Bianchi's classes cross-culturally collaborated with students in China. She reported that in these cross-cultural collaborations, students developed personal relationships with their team members in China as a result of their projects.

Student Products. When designing PBI Global, students' final products are also dependent on the project's level of student autonomy. Ms. Bianchi's student teams were expected to create an annotated bibliography, an argumentative writing piece in Claims Sheet format, and an infographic on Piktochart (<https://piktochart.com/>) as their multimodal digital product.

During product development, students read, write, and create iteratively across print, digital, and multimodal texts; across cultures with peers, coaches, and external experts; and across time and space. As students creatively synthesize claims and evidence, they work fluidly across multimodal forms. In this sense, the production cycle illustrates transliteracies in action. One team demonstrated transliteracies by remixing footage from the World Health Organization to create a public service announcement video. Jackson, a member

of this team, shared that this choice was prompted by a conversation with the team's external expert:

When Ms. Carper was giving us feedback on the first drafts of our products, she posed the question "how powerful would it be for your audience to hear and see authentic footage of how women are affected by water and sanitation issues?" We totally agreed with her and since Morgan [another team member] is really good at editing videos, we decided to go for it!

Instructional Supports. As noted earlier, the more complexity embedded in project design, the greater the supports are needed for students to successfully engage in the PBI Global process. We divided instructional supports into pedagogical, technological, and evaluative. In terms of pedagogical supports, the teacher needs to consider what materials, knowledge, skills, and dispositions will be needed during PBI Global to guide students toward successful completion of their inquiry. Materials may include instructional scaffolds, such as an annotated bibliography graphic organizer and a Claims Sheet template.

The role of PBI Global coaches and the intentional decisions made for grouping students are other examples of pedagogical scaffolds. Pedagogical scaffolds also work in conjunction with technological and evaluative supports. For example, Ms. Bianchi identified that students needed a collaborative digital space for research and writing, so she created a Google Docs hub for the project with individual team work spaces. Creating a lesson to teach her students how to use the hub acted as a pedagogical support, and the hub served as a technological support. In terms of evaluative supports, providing students with a PBI Global rubric at the onset of the project, conducting benchmark check-ins with student teams, and incorporating feedback from external experts aid in setting expectations and formatively assessing students during the PBI Global process. These supports provided students with feedback about their academic skills and their cosmopolitan dispositions.

Implement

After designing a PBI Global, it is time to facilitate the project with students. Once students are divided into collaborative teams, each team should be assigned a coach. (More information about choosing and training coaches is discussed later.) Teachers, students, and coaches begin with the end in mind by discussing product and cross-cultural collaboration expectations while referencing the project rubric. The example PBI Global Google Docs document in Figure 3 can serve as a model

for students. By using a central project page for each team, the students, coaches, teachers, and external experts have easy access to the team's PBI Global materials and can monitor progress and provide feedback in a centralized location.

Because the common read builds students' background knowledge on the chosen global issue, the red phase of compelling question development typically begins after students have interacted with the text. While reading *A Long Walk to Water*, Ms. Bianchi's students generated subtopics of interest for their compelling questions. After finishing the text, the students worked through a lesson on what defines a high-quality compelling question and then used their list of water- and sanitation-related subtopics and question stems to draft compelling questions. With a draft of their research question, students began gathering and analyzing sources while continuing to revise and refine their compelling question.

While gathering and analyzing credible sources during the green phase, students developed annotated bibliographies, which support critical and digital literacies through the consideration of credibility, bias, and differing perspectives. Ms. Bianchi provided students with an Annotated Bibliography Graphic Organizer (see Figure 4) that included three references relevant to water and sanitation issues, and the students were responsible for identifying, citing, and annotating an additional two sources relevant to their specific compelling questions. Ms. Bianchi also required students' sources to come from credible publications outside the United States. Reading sources from diverse perspectives on the same topic can help students see how one's perspective is shaped by one's environment and provides a path for students to enter into international conversations.

During this phase of the PBI Global process, students may need additional support in determining what sources are credible and useful. If students are new to the research process, then lessons on sourcing, citing, and annotating will be essential. To ensure that students' source gathering is answering their compelling question, the teacher can model this practice, include prompts in the Annotated Bibliography Graphic Organizer, and schedule check-ins with student teams and coaches.

The orange phase of the PBI Global process takes place with students creatively synthesizing claims and evidence. We recommend that students approach their creative synthesis by considering how claims, warrants, and evidence are constituted on the Claims Sheet to most effectively convey a nuanced, evidence-based response to the compelling question and how

Figure 3
Example PBI Global Google Docs Document From One of Ms. Bianchi's Student Teams

PBI Global - Every Drop Counts: Global Water and Sanitation Issues

After reading *A Long Walk to Water* by Linda Sue Park, begin working in your team to develop and conduct your PBI Global on an issue related to global water and sanitation issues. Follow the teacher's directions and the five-phase process detailed below. The first step is to determine your team members' roles.

Team Member Roles:

- Provocateur (overall group leader; makes sure the team is meeting deadlines; serves as the primary communication link between the team, the coach, and the teacher) -
- Research Lead (point person for the annotated bibliography) -
- Writing Lead (point person for the Claims Sheet) -
- Visual Lead (point person for the digital product) -

Being a lead does not mean that the person is the only one working on and responsible for a specific product; a lead's role is to organize and coordinate daily working arrangements toward completion of a product. Each member of your team will contribute to the completion of all products.

Ask a Compelling Question: How are international organizations involved in mitigating and ending water-related crises?

Learning Goals: You will...

- Choose a compelling question to research
- Gather and analyze credible sources related to the compelling question in an annotated bibliography
- Creatively synthesize claims and evidence in written (claims sheet) and visual (digital product) forms in response to the compelling question
- Critically evaluate and revise your claims sheet and digital product based on peer feedback and the expectations set forth in the rubric
- Share, publish and act through a showcase and via digital media

Gather & Analyze Sources

- Gather and analyze at least five sources related to the compelling question through an annotated bibliography
- Use this [annotated bibliography graphic organizer](#) to compile your work
- Use this [annotated bibliography template](#) to format your final annotated bibliography

Creatively Synthesize Claims & Evidence

- Synthesize two claims with corresponding evidence paragraphs in a claims sheet based on the research compiled in the annotated bibliography
 - Claim 1 = Relate to *A Long Walk to Water* and South Sudan
 - Claim 2 = Global Overview
- Use the [evidence, warrant, and claim graphic organizer](#) to synthesize research findings
- Use this [claims sheet template](#) to format your final claims sheet
- Based on your claims sheet, create a [Piktochart](#) to visually represent your most significant research findings

Critically Evaluate & Revise

- Post an image of your Piktochart and the URL for your claims sheet to this [Padlet](#)
- Conduct a peer evaluation for at least one team using this [rubric](#) to guide your feedback
 - Post your feedback as a comment on the team's Padlet post
- Revise your claims sheet and Piktochart based on peer feedback
- An external expert will be providing feedback for your team on ____ and _____.
 - The first session will be focused on revising and editing your draft claims sheet.
 - (Insert claims sheet link here by ____)
 - The second session will be focused on reviewing your claims sheet and revising and editing your digital product.
 - (Insert claims sheet link here by ____)
 - (Insert digital product link here by ____)

Share, Publish & Act

- Share the link for your team's finalized annotated bibliography graphic here: <https://docs.google.com/document/d/1vqWqBdVjP8EH7lqtKHS5VXOq8GSVLPJPhf0bvadi7QI/edit?usp=sharing>
- Share the link for your team's finalized claims sheet here: https://docs.google.com/document/d/17JqsUyjpqs_PPBhFnXYxGqZKf16jjrh2boDmE0KrvNI/edit?usp=sharing
- Share the link for your team's finalized piktochart here: <https://magic.piktochart.com/output/23322142-global-water-crises>
- Practice your team's presentation for the showcase

Note. The color figure can be viewed in the online version of this article at <http://ila.onlinelibrary.wiley.com>.

Figure 4
Example PBI Global Annotated Bibliography Graphic Organizer

Name:	PBI Global Annotated Bibliography Graphic Organizer		Date:
Compelling Question: How are international organizations involved in mitigating and ending water-related crises?			
Citation/Bibliography: Make sure it is in APA format .	Summary/Annotation: Summarize the entire text or the excerpt you used in your own words. This should be done in 2-4 sentences.	Analysis/Assessment/Reflection: Analyze and explain why this source is credible. Describe in detail how the information in this source is going to be used in your paper. This should be done in 2-4 sentences.	
Park, L.S. (2010). <i>A long walk to water</i> . New York: Houghton Mifflin Harcourt.	Through the use of a dual narrative, Park shares the stories of Salva and Nya - two young people growing up two decades apart in Sudan. Nya's story focuses on her daily quest to provide her family with water, while Salva's narrative details his survival after being forced to flee South Sudan due to violence.	Salva and Nya's stories are based on their real lives as shared with the author. Their intersecting lives shed light on the multi-generational water crisis affecting South Sudan and how international organizations, including the United Nations and Salva's Water for South Sudan, are working to mitigate the crisis and stabilize life in this region.	
Rwarkaringi, M. D. (2016, May 26). Desperate water crisis in South Sudan. <i>Mail & Guardian</i> . Retrieved from https://mq.co.za/article/2016-05-26-desperate-water-crisis-in-south-sudan .	Decades of conflict in South Sudan have resulted in the destruction of urban water infrastructure, while rural areas of the country have never benefited from such infrastructure. As an economic crisis deepens in South Sudan, the price for delivering water, sanitation, and hygiene services continues to skyrocket, leaving many without access to clean water. As political instability continues, the likelihood for investment in reliable and safe water infrastructure decreases, resulting in large numbers of South Sudanese being at-risk for severe dehydration and water-borne illnesses. International aid organizations have been working to mitigate the crisis, but long-term solutions must include building capacity within the South Sudanese government.	Rwarkaringi's article provides a recent description of the deepening water crisis in South Sudan. The author asserts that long-term solutions to this crisis require a shift in mindset from international aid organizations toward building capacity within the South Sudanese government. Political instability is perceived as a major roadblock toward providing the South Sudanese people with reliable, clean water supplies.	
United Nations (n.d.). <i>Water</i> . Retrieved from http://www.un.org/en/sections/issues-depth/water/index.html .	Water scarcity currently affects more than 40% of the global population. Access to clean drinking water is essential for human health. The United Nations began to formally address this global crisis in the late 1970s with the United Nations Water Conference. Most recently, the UN General Assembly proclaimed the 2005-2015 International Decade for Action, "Water for Life" in order to strengthen global action to meet water-related Millennium Development Goals.	The United Nations is actively involved in taking action to end global water crises through addressing issues of water and security; water, sanitation, and hygiene; unclean water and child mortality; and improved sanitation and economic benefits. This site links to multiple specific initiatives that the UN has undertaken with regard to improving global access to clean, safe, and reliable water supplies.	
United Nations Sustainable Development Goals (n.d.). Goal 6: <i>Ensure access to water and sanitation for all</i> . Retrieved from http://www.un.org/sustainabledevelopment/water-and-sanitation/ .	This site highlights the water-related United Nations Sustainable Development Goal (SDG), which seeks to achieve sustainable, universal access to safe and affordable drinking water and adequate sanitation by 2030. Links to UN initiatives related to achieving this goal are also collated on the site.	United Nations initiatives detailed on this site demonstrate how this international organization is working globally to ensure sustainable, universal access to safe water and adequate sanitation in order to improve public health. The UN serves as a watchdog agency that also has the ability to mobilize collective action on this issue.	
Simonson, K. (2003). The global water crisis: NGO and civil society perspectives. Retrieved from https://www.files.ethz.ch/isn/20304/06_2003.pdf .	Increasing population, rising living standards, and pollution are threatening the global supply of freshwater. This report examines the diverse approaches toward supplying sustainable. Many financial institutions are promoting privatisation as a solution to the crisis. However, NGOs and civil society groups reject this economic approach to water. They claim that water is not a regular commodity, it is necessary for human and ecosystem survival. Large corporations are quickly taking over the majority of water services, leading to conflicts between communities and private service providers. A growing movement of NGOs, civil society actors, and concerned citizens is preparing to challenge the dominant corporate approach to the most basic source of life—water.	The author presented this report at the Programme on NGOs and Civil Society of the Centre for Applied Studies in International Negotiation (CASIN). Pages 21-23 address the diverse types of international organizations involved in the global water crisis and their approaches and functionalities. This information will be used to provide a broader perspective on the work of international organizations to mitigate and end global water crises.	
Helpful Hint: Use these Writing Frames for the Annotated Bibliography to structure your summary and analysis sentences.			

Note. The color figure can be viewed in the online version of this article at <http://ila.onlinelibrary.wiley.com>.

this compares with the representation of information through the digital product(s). Ms. Bianchi set the expectation that students would synthesize two claims based on the research in their annotated bibliography; claim 1 answered their compelling question in the context of *A Long Walk to Water* and South Sudan, and claim 2 addressed the global scope of the water-related issue prompted by the compelling question. Evidence-based and argumentative writing can be challenging for students. To support learners during this phase, we recommend conducting lessons with students on how to identify and characterize evidence, warrants, and claims. Ms. Bianchi implemented a lesson with students based on the forensic problem "Slip or Trip?" (see Hillocks, 2011) to explicitly define and grapple with these concepts before students began developing their own claims, warrants, and evidence. In addition,

providing students with an Evidence, Warrant, and Claim Graphic Organizer (see Figure 5) can help learners coherently structure their research synthesis.

When creating digital products, students can use the digital tool of their choice, choose from a list of options, or use a teacher-designated tool. A general guideline for selecting a digital tool is that it should afford collaboration among students on the same team. In the past, students participating in PBI Global have used Prezi (<https://prezi.com/>), Animoto (<https://animoto.com/>), VoiceThread (<https://voicethread.com/>), ThingLink (<https://www.thinglink.com/>), and Piktochart, although there are numerous others available online, many for free. Ms. Bianchi's students created infographics using Piktochart to visually represent their research findings, which were synthesized in prose on the Claims Sheet (see Figure 6). Students

Figure 5
Example PBI Global Evidence, Warrant, and Claim Graphic Organizer

Evidence, Warrant, & Claim Graphic Organizer		
Compelling Question: How are international organizations involved in mitigating and ending water-related crises?		
Evidence (Facts, observations, data, statistics)	Warrant (General rule or assumption that most people accept as common sense)	Claim (Based on evidence and warrant)
<ol style="list-style-type: none"> 1. Prior to a well being installed in her village, Nya walked twice per day to a pond to gather water for her family; these trips took all day and were carried out 7 months per year (Park, 2010, p. 20). 2. For five months every year, during the dry season, Nya's family moved to a camp near a lake; the camp was three days' walk from Nya's village. At the lake camp, Nya was still responsible for gathering water; to do this, she had to dig a hole in the lake's wet clay and wait for the hole to fill so that she could scoop the water into her water container; this could take hours. Nya's family did not live at the lake year-round because of the rivalry between her tribe, the Nuer, and the Dinka, which often resulted in conflict over the land around the lake (p.26-27). 3. Nya's sister, Akeer, becomes ill due to the unclean lake water and has to be taken to a medical clinic a few days' walk from the lake. The medicine at the clinic helps Akeer get better; however, a nurse at the clinic warns Nya's mother that Akeer must drink clean water to avoid future illness and directs Nya's mother to boil dirty water before consumption. Nya is very concerned by this directive as the amount of water from the lake is very small and will likely evaporate before it is boiled long enough, and when Nya and Akeer walk to the pond from their village, it is so hot that the girls need to take a drink of the pond water as soon as they arrive (p. 39-40 and 45-46). 4. During Salva's journey from southern Sudan to Ethiopia, he crosses the Nile River and is amazed by the relative prosperity and abundance of the villagers living near the river; however, he also experiences the hazards of living so near the water, e.g., the large numbers of mosquitoes that appear at dusk. In order to make it across the desert to Ethiopia, Salva and his fellow travelers must fill as many containers as possible with water from the Nile before venturing into the Akobo desert (p. 46-50). 5. In July 1991, Salva is living in a refugee camp run by foreign aid groups in Ethiopia. The Ethiopian government falls and new rulers order the closure of Salva's camp. To accomplish this, soldiers arrive unannounced and force the refugees to flee through the Gilo River, which is flooded and full of crocodiles (p. 74-75). 6. As an adult, Salva returns to South Sudan and begins building water wells as part of his organization Water for South Sudan, including a well in Nya's village (p. 51, 57-58, 64, 70-71, 76-77, 83-84, 90, 111-115). 7. After fleeing Ethiopia, Salva decides to walk to Kenya since there are refugee camps there. He lives in two camps – Kakuma and Ifo (p. 79, 84). 8. In the Ifo camp, Salva meets Michael, an aid worker from Ireland, who teaches him English and how to play volleyball (p. 85-87). 9. In the mid-1990s, a rumor began to spread around Ifo camp that 3,000 boys and young men would be chosen to live in the United States. For many months, Salva's name did not appear on the list, but then one day Michael came to fetch Salva to show him that his name was on the relocation list to move to Rochester, New York (p. 87-89). 10. Before traveling to the US, Salva had to complete paperwork and a medical examination in Nairobi, Kenya. He recalls this time as mostly a blur, except for "one clear moment: when he was given new clothes" in order to be prepared for the winter weather in New York (p. 91-92). 	<ol style="list-style-type: none"> 1. If young girls, like Nya, have to spend their days fetching water for their families, then they are missing out on the opportunity to receive an education. 2. Since Nya, her family, and many other rural southern Sudanese drink water from local ponds, lakes, and rivers, they cannot rely on the water being clean. 3. Foreign aid organizations are able to provide very basic living conditions in which refugees and displaced persons may reside, but these camps can only exist as long as the government of the country in which they are located permits. 4. The work of large international aid organizations in southern Sudan as described in <i>A Long Walk to Water</i> is primarily reactionary, e.g., refugee camps for after people become displaced and medical clinics to treat illness after people become sick. 5. Salva's organization, Water for South Sudan, has a more proactive mission of building wells in southern Sudanese communities to mitigate water sanitation issues, lessen conflict over water resources, and enable more time for other important activities, e.g., school. 6. <i>A Long Walk to Water</i> primarily deals with rural water issues in South Sudan. 7. Since the first publication of <i>A Long Walk to Water</i> in 2010, the water crisis in South Sudan has not abated. 8. Government instability in South Sudan exacerbates the water crisis. 	<p>Claim 1 (Relate to <i>A Long Walk to Water</i> and South Sudan):</p> <p><i>A Long Walk to Water</i> highlights three major initiatives with which international organizations are involved to mitigate and end water-related crises in South Sudan:</p> <ul style="list-style-type: none"> • Refugee services (camps and relocation), • Health facilities, and • Water well building.
	<p>Ways to begin writing a warrant:</p> <p>When people... Generally,... Most people... In most cases,... Usually,... As a rule,...</p>	<p>Ways to begin writing a claim:</p> <p>_____ is probably... _____ is most likely...</p>

can benefit from working through creative synthesis as a revision process with peers, coaches, and the teacher. Collaboration during revision creates opportunities for transactions of perspectives and intercultural dialogue as students begin to work outside their comfort zones to push their thinking deeper, refine arguments, and polish products.

The blue phase of the PBI Global process, critically evaluate and revise, is ongoing throughout project implementation. Evaluation and revision can be internally and externally managed. For example, Ms. Bianchi used older students who had participated in previous PBI Globals as coaches for each team. Coaches were either conducting independent studies with school faculty or needed community service hours for their membership in the National Honor Society. Coaches either met with their teams during Ms. Bianchi's class or scheduled a

virtual or in-person session with their teams before or after school or during lunch. Each coach worked with two or three teams to reflect on student progress and provide targeted supports to high-need project areas. Ms. Bianchi's students were also given the Feedback Form rubric (see Figure 7) to evaluate and provide feedback on another team's project.

Additionally, student teams had at least two sessions to work with external experts: one when students completed first drafts of their Claims Sheet and digital product(s) and one when students had more finalized forms of their written and multimodal digital products ready. External experts provided feedback via the same rubric used by students during peer review. Bringing in community members, PBI Global alumni, and even other teachers and school personnel to give feedback can create a heightened sense of importance for

Figure 6
Example PBI Global Claims Sheet



Team __ :

Compelling Question: How are international organizations involved in mitigating and ending water-related crises?

Claim 1 (Relate to A Long Walk to Water and South Sudan): *A Long Walk to Water* highlights three major initiatives with which international organizations are involved to mitigate and end water-related crises in South Sudan:

- Refugee services (camps and relocation).
- Health facilities, and
- Water well building.

Warrants and Evidence: The dual narratives shared by Linda Sue Park in *A Long Walk to Water* focus on Nya, a young girl living in southern Sudan in the late 2000s, and Salva, a boy growing up in southern Sudan in the mid-1980s who flees the violence in Sudan for Ethiopia, then Kenya, and finally the United States. Through Nya's and Salva's stories, the roles of international organizations in southern Sudan are addressed. Their narratives, although decades apart, coincide when Salva returns to southern Sudan as a young man, after many years as a refugee, to begin building wells in rural communities through his non-profit, international organization, Water for South Sudan. Nya's story illustrates the involvement of international organizations when Nya's younger sister, Akeer, becomes ill after drinking unclean lake water and has to be taken to a medical clinic run by an international aid organization. Salva also becomes enmeshed with international organizations through the refugee camps in which he resides in Ethiopia and Kenya. In the dual narrative of Salva and Nya, international aid organizations in southern Sudan are characterized as primarily reactionary, i.e., organizations' resources are utilized after someone gets sick or becomes displaced. However, Salva's Water for South Sudan initiative is described as being more proactive, i.e., building wells in southern Sudanese communities mitigates water sanitation issues, lessens conflict over water resources, and enables more time for other important activities, e.g., school. As of spring 2014, Salva's nonprofit had drilled more than 250 wells in southern Sudan. The precarious and vulnerable position of international organizations and displaced persons in politically unstable regions is underscored in *A Long Walk to Water* by the sudden, chaotic, and violent closure of the Ethiopian refugee camp in which Salva lives in 1991. Seven years after the publishing of Salva's story, political instability continues to plague South Sudan and exacerbate the country's water crisis. Although *A Long Walk to Water* focuses on the water challenges facing rural southern Sudan, urban areas in South Sudan are also greatly affected. In the South Sudanese capital of Juba, inhabitants pay for clean water at distribution points throughout the city, often paying three times the average gross national daily income for a 200-liter container of water. According to Tim Irwin, a communications officer for the United Nations International Children's Emergency Fund (UNICEF), "the country's [South Sudan's] worsening economic crisis and rising fuel prices have more than doubled the cost of delivering water, sanitation, and hygiene services." As the water crisis in South Sudan persists, international organizations are beginning to advocate for building capacity within the South Sudanese government to mitigate the water crisis rather than having aid organizations be responsible for emergency water treatments, drilling, and chlorine provisions.

Claim 2 (Global Overview): International organizations are uniquely positioned to address water-related crises through bringing awareness, coordinating multi-national efforts, and monitoring progress.

Warrants and Evidence: There are many stakeholders when it comes to water issues, which often lead to complex and time-consuming negotiations in order to agree on action steps and responsibilities to address water-related challenges. In a 2003 report from the Centre for Applied Studies in International Negotiations, Simonson categorizes stakeholders involved in water issues:

- Governments and international organizations,
- Development agencies and banks,
- International financial institutions,
- Multinational corporations,
- Business associations and lobby groups, and
- Non-governmental organizations.

Along with governments, international organizations participate in the negotiation of water-related trade law, domestic water policies, privatization agreements, and the monitoring of the global state of water issues and international water dispute settlement. With 193 Member States, the United Nations is an international organization particularly suited to tackle water-related global issues since its membership demonstrates international buy-in to the organization's mission. Many UN-affiliated organizations work on water-related issues, including the United Nations Environment Program (UNEP), World Health Organization (WHO), the United Nations Development Program (UNDP), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the UN Food and Agriculture Organization (FAO), UNICEF, and the UN Commission on Sustainable Development. The UN has been addressing global water crises for many years through endeavors, such as

- The UN Water Conference (1977),
- International Drinking Water Supply and Sanitation Decade (1981-1990),
- International Conference on Water and the Environment (1992), and
- Earth Summit (1992).

The International Drinking Water Supply and Sanitation Decade, in particular, helped 1.3 billion people in developing countries gain access to safe drinking water. More recently, the UN has raised awareness on water-related issues through the General Assembly declaring 2003 the International Year of Freshwater and 2005-2015 the International Decade for Action, "Water for Life," including observing March 22nd as World Water Day. In order to foster coordination and collaboration among Member States on water issues, the UN Chief Executives Board established UN Water, a UN inter-agency coordination mechanism for all freshwater and sanitation related issues. In addition, the UN General Assembly came to agreement on the right of every human being to have access to sufficient water for personal and domestic uses, which must be safe, acceptable and affordable, and physically accessible. Through coordinated international efforts, the specific water-related target in the Millennium Development Goals of reducing by 50 percent the proportion of people without access to improved sources of water by 2015 was met five years ahead of schedule in 2010. In recent years, the UN Secretary Council has recognized climate change for its security implications, with water being the medium through which climate change will have the most effects. UN Secretary-General Ban Ki-moon underscored this growing concern in 2011 asserting, "Around the world, hundreds of millions of people are in danger of going short of food and water, undermining the most essential foundations of local, national, and global stability. Competition between communities and countries for scarce resources – especially water – is increasing, exacerbating old security dilemmas and creating new ones." The UN continues to make water-related issues a focus of its global mission as evidenced by the inclusion of goal 6 in the 2030 Sustainable Development Goals, which calls for ensuring access to water and sanitation for all.

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For annotations, see <https://goo.gl/MXXRZt>

Note. The color figure can be viewed in the online version of this article at <http://ila.onlinelibrary.wiley.com>.

Figure 7
Example PBI Global Feedback Form

PBI Global Feedback Form – Project Characteristics for Team ____				
	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Intellectual Quality	Inquiry is thought provoking and well developed. Project is clearly supported with thorough and insightful research. Thoroughly synthesizes and constructs clear ideas from research gathered. Research is fully and correctly cited with a works cited.	Inquiry is well developed. Project is supported with good research. Synthesizes and constructs clear ideas from research gathered. Research is fully and correctly cited with a works cited.	Inquiry is either somewhat limited or too open ended. Project is somewhat supported with research. Attempts to synthesize and construct clear ideas from research gathered. Attempts to cite research; works cited is flawed.	Inquiry is limited and is incomplete or confusing. Project is unclearly supported with research. Attempts to synthesize and construct unclear ideas from research gathered. Minimal attempt to cite research; works cited is incomplete and flawed.
Aesthetic and Technical Quality	Ideas in visual products are clear, complete, and persuasively expressed for a general audience. Visual demonstrates original personal expression that greatly enhances the purpose of inquiry.	Ideas in visual products are clear, complete, and appropriate for a general audience. Visual demonstrates some personal expression that mildly enhances the purpose of inquiry.	At times, ideas in visual products are unclear and/or awkwardly expressed; may be inappropriate for general audience. Visual demonstrates little personal expression that minimally enhances the purpose of inquiry.	Ideas in visual products are unclear and incorrectly or inappropriately expressed for general audience. Visual demonstrates a lack of personal expression that does not enhance the purpose of inquiry.
Language Structure Quality	All written and spoken language is well constructed and has varied structure and length. No errors in grammar, mechanics, and/or spelling. Uses vivid words and phrases. The choice and placement of words seems accurate, natural, and not forced. Purpose of written and spoken language is very clear, and there is strong evidence of attention to audience.	Most written and spoken language is well constructed and has varied structure and length. There are a few errors in grammar, mechanics, and/or spelling, but they do not interfere with understanding. Uses vivid words and phrases. The choice and placement of words is inaccurate at times and/or seems overdone. Purpose of written and spoken language is clear, and there is evidence of attention to audience.	Most written and spoken language is well constructed but uses a similar structure and/or length. Several errors in grammar, mechanics, and/or spelling interfere with understanding. Uses words that communicate clearly, but the writing lacks variety. Purpose of written and spoken language is somewhat unclear, and there is little evidence of attention to audience.	Written and spoken language sounds awkward, is distractingly repetitive, or is difficult to understand. Numerous errors in grammar, mechanics, and/or spelling interfere with understanding. Uses a limited vocabulary. Jargon or clichés may be present and detract from the meaning. Purpose of written and spoken language is unclear.

students with regard to the quality of their PBI Global products and may lead to better preparation for extending and sharing their research through the showcase during the gray phase (share, publish, and act).

Extend

The share, publish, and act phase of PBI Global traditionally involves students showcasing their research products with their community, family, and friends. Sharing with people outside the classroom gives students an authentic audience, provides an opportunity for parental involvement, and creates a celebratory atmosphere to recognize students' hard work. PBI Global showcases have taken different forms depending on how many student teams participated and the teams' digital products. Past showcases have included film festivals, group presentations, and art galleries. Ms. Bianchi's students held a gallery-style showcase to maximize the number

of attendees (see <https://www.youtube.com/watch?v=yThjYH3zrhM&feature=youtu.be>).

In terms of publishing the students' PBI Global work, we always offer to share their products online with open access (see <https://www.pbi-global.com/>). Additionally, students and teachers have published through school websites, social media, class anthologies, and community newsletters.

Students may be inspired to take action in response to their research findings. Ms. Bianchi's students held a Walk for Water event prior to their showcase and collected donations for Water for South Sudan's Iron Giraffe Challenge (see <https://www.waterforsouthsudan.org/iron-giraffe-challenge/>), in which schools worldwide compete to raise money for the drilling of more wells in South Sudan. This action piece brought the students' research full circle, as Water for South Sudan is the nonprofit organization founded by Salva Dut, the protagonist of the students' common read, *A Long Walk to*

Water. Students partnered with this organization to support South Sudanese communities' needs based on input and involvement from community members themselves. Learning can be ongoing after students take action as they continue to reflexively ask questions about themselves and society. One of Ms. Bianchi's students, Joao, expressed his interest in pursuing solutions for global water and sanitation issues as a career: "I've always wanted to be an engineer, and now I have an interest in utilizing my engineering knowledge and skills to come up with creative solutions to supplying clean water in areas without much infrastructure." In this way, the PBI Global cycle is recursive.

What Have We Learned From Previous PBI Globals?

We have conducted PBI Globals in the past at elementary, middle, and high schools and with teachers in professional development settings. With each iteration, we have adapted and refined our design to better suit the needs of students and teachers. From our experiences in implementing PBI Global, two lessons have emerged: the need for support during planning and implementation and the ability to balance intentionality and flexibility.

Creating Support: Developing a PBI Global Village

Before beginning PBI Global, it is helpful for teachers to assemble a support team of administrators, colleagues, coaches, and external experts. Administrators demonstrate explicit and tacit support for PBI Global by facilitating class scheduling, being responsive to impromptu teacher and student needs, reviewing and approving the inclusion of community members, and attending students' showcases.

In addition to administrators, bringing colleagues onboard as part of a PBI Global Village is advantageous. Colleagues generally serve in at least one of two capacities: as collaborative teachers and as cross-cultural partners. Because PBI Global is inherently interdisciplinary, many coteach to plan and implement this project, sharing the instructional workload and creating synergistic effects.

Coaches and external experts also play important roles. Coaches serve as advisors for individual student teams, with each team having the same coach throughout the entire process. The researchers have used two different groups as coaches: (1) adult community members and (2) students who have previously participated in PBI Global. In the past, adult coaches have included

parents, paraprofessionals, media specialists, and administrators. For coaches who are unfamiliar with the PBI Global process, the teacher organizes a short training session ahead of project implementation so coaches can learn about the elements of PBI Global and student expectations for the project. External experts are generally community members with specialized knowledge on the PBI Global topic who meet virtually or in person with student teams to build content knowledge and skills and to provide feedback on student products. Teachers frequently activate their social media networks to bring experts into their classrooms virtually.

During Ms. Bianchi's PBI Global, external experts were recruited from local universities and nongovernmental organizations. Students have also interviewed external experts in service of their scholarly research and shadowed or volunteered with experts' affiliated organizations to conduct action research. We have found that coaches generally help students improve the quality of the inquiry process and that external experts help students improve the quality of their products.

Creating Balance: Being Intentional While Remaining Adaptable

Throughout the PBI Global process, teachers need to embrace tensions that occur as a natural part of inquiry and cross-cultural collaboration. Using cosmopolitan literacies as a theoretical framework provides a compass for teachers as they navigate the messiness. Facilitators of PBI Global can anticipate some of the pitfalls that we have encountered and intentionally design instruction and supports to either avoid these entanglements or guide students through them.

Shared responsibility is frequently a challenge during collaborative learning (Frey, Fisher, & Everlove, 2009), so the first area that teachers may address is potential asymmetry of student collaboration. Strategies to address this challenge include preselecting student teams, assigning roles to students within a team, and setting the expectation that students will complete self- and peer assessments regarding project contributions. From a cosmopolitan literacies lens, teachers and students must be hospitable to one another's cultures and be reflexive of their own. For example, teachers and students will need to negotiate how to handle conflict cross-culturally, asking questions and listening first to understand (Freire, 1970) rather than jumping to conclusions. To mitigate the asymmetry issue across cultures, participants can negotiate expectations for communication, project responsibilities, and deadlines; interim check-ins to ensure that students' work is progressing appropriately are desirable.

Another area of balance for PBI Global facilitators concerns keeping the project curriculum-driven while maintaining its relevance through student interest and social importance. The goal is not for PBI Global to be an add-on to classroom instruction but rather to be integrated seamlessly with the course learning goals and expectations. Students will inherently engage in reading and analyzing informational texts, evidence-based writing, and presenting information in diverse formats during this iterative inquiry process. Codesigning PBI Global's action piece with students is a powerful approach to enhancing project interest and relevance. Moreover, the action piece extends cosmopolitan literacies as students mobilize to transform their world.

Conclusion

In this article, we illustrated how cosmopolitan literacies, comprising educational cosmopolitanism and transliteracies, undergird the design, implementation, and extension of the PBI Global process. Teachers and students engaging in PBI Global have the opportunity to demonstrate and build self-reflexivity, hospitality, intercultural dialogue, and transactions of perspectives while working cross-culturally. Additionally, PBI Global necessitates skills, knowledge, thinking, and acting across a range of literacy contexts (Sukovic, 2016), or what Stornaiuolo et al. (2017) referred to as "people's literacy practices 'on the move'" (p. 84). PBI Global is one entrée to the development of cosmopolitan literacies.

TAKE ACTION!

1. Passion and enthusiasm are important as you launch a new adventure with your students. Check out PBI Global (see <https://www.pbi-global.com/>) for project ideas related to the Sustainable Development Goals (United Nations, n.d.) and for instructional resources for engaging in PBI Global.
2. Find partners for collaboration in your school and community and across the world. Great websites to connect with like-minded educators are TeachSDGs (<http://www.teachsdgs.org/>), iEARN-USA (<http://www.us.iearn.org/>), TakingITGlobal (<https://www.tigweb.org/>), and ePals (<https://www.epals.com/>).
3. Choose a common read for your students to provide a foundational and shared learning experience to get them motivated.
4. Finally, jump into the process and let the adventure begin!

We acknowledge that the PBI Global process can be challenging and requires a variety of resources and a wealth of time. However, we think the student and teacher benefits offered by PBI Global far exceed the challenges to implementation. As Angela Maiers said, "The greatest gap in...education is the underestimation of student genius and their capacity to contribute. We don't see students as agents of impact" (as quoted in Snelling, 2016, p. 27). Nick's sentiments at the beginning of this article demonstrate recognition of his and his peers' capacity to be agents of change. PBI Global is one approach affording teachers and students opportunities to impact enduring challenges affecting our world.

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MORE TO EXPLORE

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- "Teaching the Globe: Opportunities and Challenges to Teaching Global Topics in the 21st Century," K–12 curricular resources provided by the Center for Global Studies at Penn State University: <http://cgs.la.psu.edu/teaching-resources/k-12-resources-1/cgs-professional-development-workshops/teaching-the-globe-opportunities-and-challenges-to-teaching-global-topics-in-the-21st-century>
- Teaching Sustainable Development Goals, an online course by World's Largest Lesson and UNICEF that includes a wealth of resources for educators: <https://education.microsoft.com/courses-and-resources/courses/SDG>