Like a Ripple on Water: An Impact Study of H20 for Life

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Abstract

The purpose of this study to report on H2O for Life’s impact on the development of global competencies among students and teachers. H2O for Life is a 501(c)(3) non-profit organization that is committed to addressing the global water crisis by mobilizing young people and educators to take action. H2O for Life develops global citizenship through service-learning opportunities that are focused on water conservation and fund-raising for water, sanitation, and hygiene (WASH) initiatives in developing countries. The organization’s primary focus is on countries in Africa like Ethiopia, Kenya, Tanzania, and Uganda and also supports projects in India, Central America and Cambodia. H2O for Life coordinates the fund-raising efforts of schools in the United States with WASH related projects in schools in developing countries.

Service-learning is a pathway that H2O for Life champions in order to address the need for clean water in much of the world. The need for clean water is monumental. The World Bank Group (2016) found that more than 2 billion people around the globe do not have access to clean water. The World Health Organization (2013) also found a wide disparity and inequity of access to clean water in rural areas compared to urban areas. In rural locales, for instance, clean water often means having to travel several miles for water and then carry it back home. Clean water retrieval is usually the work of children—especially girls—which mean less time for education and schooling. H2O for Life responds to these realities by raising awareness and money to support the development of water wells in rural areas of the developing world. H2O for Life’s mission and work is important, but what kind of impact is H2O for Life making on students and teachers in the United States? The impact study examines this question by conducting an artifact analysis of reflections written by students and teachers in the United States about their service-learning experience with H2O for Life. The study used the Asia Society’s Global Competency Matrix (Mansilla & Jackson, 2011) as a conceptual framework for the data analysis. In all, the study analyzed reflections from 115 students and 43 teachers (n = 168). It was found that both students and teachers perceived that H2O for Life was a highly transformative experience. H2O for Life’s service-learning helped participants develop all four of the Asia Society’s global competencies; especially the competencies of investigating the world and taking action. Participants were exceedingly enthusiastic about their service-learning experience. H2O for Life has an enduring impact—like an ever expanding ripple on water—by networking local and global communities in generative ways to respond to and act on the need for clean water.
**Introduction**

Water is essential to life on planet Earth. Humanity cannot survive without water. It is the ingredient for health and well-being (World Bank Group, 2016). Yet, water is a natural resource that is becoming more and more scarce. The need for clean water is monumental. The World Bank Group (2016) found that more than 2 billion people around the globe do not have access to clean water. The World Health Organization (2013) also found a wide disparity and inequity of access to clean water in rural areas compared to urban areas. In rural locales, for instance, clean water often means having to travel several miles for water and then carry it back home. Clean water retrieval is usually the work of children—especially girls—which mean less time for education and schooling. Consider the following statistics that are reported in the 2016 World Bank report called *High and Dry: Climate Change, Water, and the Economy*:

- Water scarcity, exacerbated by climate change, could cost some regions up to 6% of their GDP, spur migration, and spark conflict.
- The combined effects of growing populations, rising incomes, and expanding cities will see demand for water rising exponentially, while supply becomes more uncertain.
- Unless action is taken soon, water will become scarce in regions where it is currently abundant - such as Central Africa and East Asia - and scarcity will greatly worsen in regions where water is already in short supply - such as the Middle East and the Sahel in Africa. These regions could see their growth rates decline by as much as 6% of GDP by 2050 due to water-related impacts on agriculture, health, and incomes.
- Water insecurity could multiply the risk of conflict. Food price spikes caused by droughts can inflame latent conflicts and drive migration. Where economic growth is impacted by rainfall, episodes of droughts and floods have generated waves of migration and spikes in violence within countries.
- Policies and investments that can help lead countries to more water secure and climate-resilient economies include:
  - Better planning for water resource allocation
  - Adoption of incentives to increase water efficiency, and
  - Investments in infrastructure for more secure water supplies and availability
  (Bullet point summary in this section quoted from World Bank Group, 2016)

Clean water is not just necessary for drinking. It is also necessary for health. Indeed, water is thoroughly integrated with sanitation and hygiene (WASH). Access to clean water and adequate sanitation substantially decreases child mortality rates (H2O for Life, 2015). Yet, water scarcity for drinking and sanitation is a global issue both now and in the future. The Arlington Institute (2016) explains, “By 2050, the number of people on the planet is projected to exceed 9 billion . . . making an adequate supply of water available to everyone is a monumental task that will require an unprecedented level of international cooperation and compassion” (para. 3).
H2O for Life is a 501(c)(3) non-profit organization which has responded to the global water crisis with prodigious cooperation and compassion. This NGO is committed to addressing the global water crisis by mobilizing young people and educators to take action. According to the H2O for Life website (2015a), “since 2007 H2O for Life and our partner schools have donated almost $3 million to fund water projects in the developing world. H2O for Life has worked with 500,000 students in the United States, Canada, and the UK to complete over 1200 service-learning projects - helping fund more than 900 life-saving water projects in 21 different countries around the world” (para. 1).

Service-learning is a pedagogical pathway that H2O for Life champions to be responsive to the need for clean water in much of the world. H2O for Life’s service-learning initiatives are also ways to guide students and educators in their development as global citizens. The purpose of this study is to report on H2O for Life’s impact on the development of global competencies among its participants. The study is organized in four remaining sections. First, the paper provides contextual information by sharing more background details about H2O for Life. Second, the study employs the Asia Society’s Global Competency Matrix (Mansilla & Jackson, 2011) as a conceptual lens for framing the study. Third, the paper explains the study’s research question and methodology. Fourth, the paper reports on the study’s findings and discusses the implications of the research.

**Context**

H2O for Life seeks to develop global citizenship through service-learning opportunities that are focused on water conservation and fund-raising for water, sanitation, and hygiene (WASH) initiatives in developing countries. While H2O for Life global reach includes projects in the Caribbean, Central America, and India; the organization’s primary focus is on schools in African countries such as Ethiopia, Kenya, Tanzania, and Uganda. H2O for Life coordinates the fund-raising efforts of schools in the United States with WASH related projects in schools in developing countries. Lori Stoltzman’s book (2015), *Raising Awareness, Raising Hope*, shares the story of H2O for Life from the perspectives of its founder and its participants—like students and teachers. Stoltzman (2015) begins by describing the following eye-opening statistics related to WASH in the developing world:

- Every 90 seconds a child dies from lack of access to clean water
- Women and children spend up to 60 percent of each day walking to collect water
- 160 million suffer from stunting and chronic malnutrition due to unsafe water and a lack of basic sanitation
- Without access to a latrine, many girls stop going to school once they reach puberty (As quoted in Stoltzman, 2015, p. xi; H2O for Life, 2015b, para. 1).
- Women and girls spend 266 million hours each day finding a place to go (www.water.org, 2016)
In the face of these dire facts H2o for Life finds its mission to engage, educate and inspire youth to become global citizens by taking action to provide water, toilets, and hygiene education to global partner schools (Stoltzman, 2015, p. xx).

Patty Hall, the founder and President of H20 for Life, started the organization after a volunteer service trip to Keumbu, Kenya. The trip opened her eyes to the “effect of inadequate access to clean water, sanitation, and hand washing stations in most rural communities” (Stoltzman, 2015, p. xvi). A teacher by profession, Hall understood that educators have one of the most important roles in society as they guide and educate learners to become citizens in their communities including the global community. Hall explains how teachers “understand how the youth of today must be engaged in relevant, meaningful actions, and must have opportunities to actively participate in service-learning that can change the world” (Stoltzman, 2015, p. xix). H2O for Life provides service-learning opportunities for schools to raise awareness about the global water crisis while raising money for WASH projects for partner schools in developing countries. Hall posits that service-learning allows students to better understand and experience the daily onerous task of collecting water to drink, cook, and bathe. As Hall explains, “In much of the United States, access to clean water is given little thought but for people in the developing world it is an every-day concern” (Stoltzman, 2015, p. xvi). The H20 for Life service-learning experiences include the Walk for Water where students raise money by walking several miles while carrying 6 liters of water in a backpack.

H20 for Life’s emphasis on service-learning has a strong research backing. The literature shows that service-learning has many fruitful possibilities for teaching and learning. Shelley Billig (2000) explains, “Service-learning offers a powerful pedagogical alternative that allows students to gain a greater understanding of concepts while contributing to their communities” (p. 658). Service-learning provides learners with authentic experience where they can apply what they have are learning in schools with real life issues in the community. Service-learning most often takes the form of collaborative projects in which groups have the opportunity to demonstrate and relate what they are learning in a way that helps others (Waterman, 2014). Well-designed service-learning projects ensure a balance between student learning and the needs addressed by service sites. Service-learning projects have three main features: (1) they address real and compelling issues or problems, (2) they apply and develop social and civic skills, and (3) they include purposeful reflections to help learners process what they learned from the service-learning experience (Billig, 2000; Bringle, Hatcher, & Jones, 2012; Saltmarsh, 2005; Waterman, 2014).

The National Council of Social Studies (NCSS) also extols the benefits of service-learning for citizenship development. In their position statement on service-learning, NCSS (2000) asserts that service-learning is a powerful way to engage learners in “solving community problems, meet human and environmental needs, and advocate for changes in policies and laws to promote the common good” (para. 5). Service-learning is a strong way to integrate social studies with other subject matter—like science—as learners exercise citizenship skills to address the real-life needs in the community (Kahne & Sporte, 2008; Parker, 2008). H2O for
Life’s spotlight on the global water crisis is an example of the human and environmental interaction related to clean water. The service-learning opportunities provided by H2O for Life allow participants to cultivate core democratic values like equality, justice, the value of life, and working for the common good. Furthermore, service-learning connects with NCSS’ (2013) recent emphasis on preparing for college, career, and civic life—also called the C3 Framework. The C3 Framework document posits that “opportunities to engage in service-learning experiences help prepare students for their adult responsibilities in participatory democratic cultures” (p. 89). Indeed, service-learning opportunities like H2O for Life connects with C3 Framework as learners recognize the societal problem of the global water crisis and take action—in an informed way. The skills and competencies gained from service-learning will benefit learners during their college years, their career, and as they engage in civic life.

**Conceptual Framework**

Empathy and awareness are included in the skills that service-learning helps to foster. These are not only skills, but also global competencies. What are global competencies? An etymological examination of the root words of global competency is helpful here. I define global as a complex—and contested—phenomenon that reflects the tension between identities of power, locality, culture, and equality (Byker, 2015). In short, global is humanity’s space and time within Earth’s geography. To unpack the meaning of competency it is beneficial to examine the Latin root word *competentia*, which means “meeting together” and “fitting together with symmetry” (Competency, n.d.). Competency implies having knowledge and skills fit together. Combined, global competency is the symmetry of knowledge and skills to critically act as a citizen of the world (Byker, 2016a).

Organizations like the Asia Society and Partnership for 21st Century Skills have created global citizenship frameworks that prepare teachers and students with global competencies. For example, the Partnership for 21st Century Skills’ (2014) *Framework for State Action on Global Education* is a policy document, which puts special emphasis on a teacher’s role developing global competencies. The first foundation principle in the *Framework for State Action on Global Education* is that for “students to be global, teachers must be global” (Partnership for 21st Century Skills, 2014, p. 5). Teachers as the impulsion for global competency development echoes back to Patty Hall’s genesis for starting H2O for Life. Teachers have an “immense impact potential” (Byker, 2016a, p. 266) on their students’ lives.

The Asia Society, a New York City base organization founded in 1956, is another example of an organization committed to the mission of developing global competencies among young people. The Asia Society’s free e-book, called *Educating for Global Competency* (Mansilla & Jackson, 2011), uses a matrix to identify and organize four global competencies. The Asia Society situates their framework on the following competencies: (1) investigate the world, (2) recognize perspectives, (3) communicate ideas, and (4) taking action. Table 1 shows the Asia Society’s four global competencies.
Table 1

Asia Society’s Global Competency Matrix

<table>
<thead>
<tr>
<th>1) Investigate the World</th>
<th>2) Recognize Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) Communicate Ideas</td>
<td>4) Take Action</td>
</tr>
</tbody>
</table>

I will now unpack each global competency. Investigate the world is the competency that relates to building awareness; it is a person’s willingness to explore global issues beyond just the immediate community. The second competency, recognize perspectives, is about recognizing diversity and multiple points-of-view about issues. Communicate ideas, the third competency, aligns to a person’s competency to communicate—in informed and empathetic ways—about global topics and ideas. The fourth competency, taking action, is a person’s capacity to raise awareness about global issues and work for social justice (Mansilla & Jackson, 2011). This current study uses Asia Society’s four global competencies as a conceptual framework for analyzing the data under study. In particular, the study is guided by the following overarching research question: What is impact of the H2O for Life service-learning experience on students and teachers in the United States? To probe this question, the study asks two sub-questions:

1. To what degree, if any, do the participants’ perceptions and reflections of H2O for Life reflect the Asia Society’s global competencies?

2. Are there other outcomes of participating in the H2O for Life service-learning projects?

Methodology

I examine the research questions using an artifact analysis research design. The study’s participants are drawn from a random sample population of teacher and students in the United States who participated in the H2O for Life program between 2008 and 2013. Multiple years were selected and examined in order to if patterns would be replicated across a range of years. In all, the sample was comprised of 115 students and 43 teachers (n = 168). The collected data were the reflection artifacts that the students and teachers wrote after participating in the H2O for Life service project. The majority of the student reflections were written using a reflective graphic organizer as well as students’ letters to H2O for Life. The majority of the teacher reflections were in the form of written letters to H2O for Life.

Data Analysis

The participants’ reflection artifacts were analyzed quantitatively and qualitatively. The quantitative analysis of the reflections provided descriptive statistics related to how often the participants’ identified one of the Asia Society’s four global competencies in their reflections. The qualitative analysis focused on additional themes that emerged from the participants’
artifacts. These qualitative data were analyzed with the constant-comparative method (Miles & Huberman, 1994). I first read through all the qualitative data. I then coded the data and organized those codes into categories. Example codes included (CC) for community connection and (FP) for future participation. Then, I used Glaser and Strauss’ (1967) constant-comparative method to identify similarities, differences, and frequencies within categories across the two participant groups. I analyzed these data patterns to establish themes that help address the study’s research questions. The participant groups—students and teachers—are reported separately in the findings for organizational purposes.

Findings

This section reports on the findings of the data analysis, which address the study’s larger research inquiry about the impact of the H2O for Life service-learning project. The section is organized by the study’s two research sub-questions. First, I describe and show the degree that the student and teacher reflections of H2O for Life reflect the Asia Society’s global competencies. Second, I explain other themes and outcomes that emerged from the analyzed data. Finally, the paper concludes with a discussion of the implications of this study.

Development of Global Competencies

One significant impact of H2O for Life is how often the participants aligned their service-learning experience at H2O for Life with global competencies. Figure 1 depicts a bar graph to show the number of times that the students used words or phrases that were synonymous with one of the Asia Society’s four global competencies. Percentages will not equal up to 100 because some student participants referred to multiple competencies in their reflections.

**Student Participants Discussion of Global Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th># times discussed</th>
<th>% of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigate the World</td>
<td>53</td>
<td>46%</td>
</tr>
<tr>
<td>Recognize Perspectives</td>
<td>36</td>
<td>31%</td>
</tr>
<tr>
<td>Communicate Ideas</td>
<td>31</td>
<td>27%</td>
</tr>
<tr>
<td>Take Action</td>
<td>68</td>
<td>59%</td>
</tr>
</tbody>
</table>
Figure 1. This figure captures the number of times that students used words or phrases synonymous with one of the Asia Society’s four global competencies. The top number on each bar indicates the actual number of times repeated. The percent number is within each bar. The percentage number is calculated from the total number of student participants (n=115).

As Figure 1 shows, the student participants discussed the benefit of taking action—as a global competency—a little more than 59% of the time in their reflection responses. Investigating the world was the second most discussed global competency among the students and was referenced in 46% of the reflections. The third most identified global competency was recognizing perspectives, which was discussed 31% of the time. While communicating ideas as a global competency was only identified 27% of the time, the students were the most specific in their examples of how H2O for Life guided them in ways to communicate ideas about the global water crisis. For example, students mentioned how they wrote letters and a class book as ways to communicate their ideas. Example responses for each of the four global competencies are provided below.

- For the global competency of “investigate the world” - students wrote:
  - I now have a better understanding about Nicaragua.
  - The project gave me a look inside of a world that I probably wouldn’t have known living in the environment that I do.

- For the global competency of “recognize perspectives” - students wrote:
  - My favorite thing was writing the book. It really helped me realize that some people have so little. It also made me want to help others.
  - This project changed me. I’ve realized how lucky we are here and how much help is need in other places and that we can provide the help.

- For the global competency of “communicate ideas” - students wrote:
  - The water book we wrote about Kenya showed that way too many people in the world are going without water.
  - We constructed an H2O book to sell in order to spread the message and spread the information about our project. I think it was an excellent idea and very professional. It provided much information in a small, thin creative book.

- For the global competency of “take action” - students wrote:
  - I never thought that I could do anything to help solve problems that are happening in another part of the world, but this project has taught me
different. It feels amazing to know that [my school] is making a difference in people’s lives.

- I took money from my own allowance and put it in for the project. I could have bought something, but I decided to give back instead.

The teacher participants also referenced global competencies in their reflections on their leadership in organizing the H2O for Life service-learning experiences at their school. Figure 2 depicts a bar graph to show the number of times that teachers in the study used words or phrases that were synonymous with one of the Asia Society’s four global competencies. Again, the percentages do not equal up to 100 because some teacher participants referred to multiple competencies in their letters and reflections.

**Teacher Participants Discussion of Global Competencies**

![Bar Graph]

*Figure 2.* This figure captures the number of times that the teachers used words or phrases that were synonymous with one of the Asia Society’s four global competencies. Please note that the top number on each bar indicates the actual number of times repeated. The percent number is within each bar. The percentage number is calculated from the total number of teacher participants (n=43).

As Figure 2 shows, the teacher participants discussed the benefit of taking action—as a global competency—more than 84% of the time in their letters and reflections. Like the students, investigating the world was the second most discussed global competency among the teachers and was referenced in 56% of the communications. The third most identified global competency was recognizing perspectives, which was discussed 40% of the time. While communicating
ideas as a global competency was identified 33% of the time, the teachers shared detailed examples of their students communicated ideas as part of the H2O for Life experience. For example, teachers discussed how their teachers gave speeches, presented PowerPoints, and wrote class books in order to communicate the importance of water conservation and raise awareness about the global water crisis. Example responses from the teachers for each of the four global competencies are provided below.

- For the global competency of “investigate the world” - teachers wrote:
  
  o Students had a chance to realize what was going on in the world without sitting in a classroom all day.
  
  o Students were challenged to think about their own habits concerning water usage and developed awareness of the enormity of issues surrounding water in the world.

- For the global competency of “recognize perspectives” - teachers wrote:
  
  o This service-learning project provided our first grades students with the opportunity to become global citizens. The students realized that our family, community, country, and world affect our culture.
  
  o During the project, the kids said things like, “Imagine if we had to drink this water,” “What if we had to do this every day before school,” and “We are so lucky to have everything that we need at our school.”

- For the global competency of “communicate ideas” - teachers wrote:
  
  o Our fifth graders not only raised these funds, but they also educated our school on the importance of clean water and water conservation.
  
  o Raising money was essential, but what about raising awareness? The students taught others throughout the community about the global need for clean water. They spoke eloquently about the rights of all citizens to have access to clean drinking water. Some made speeches, some created posters, and other made invitations to give to our school community to join our walk.

- For the global competency of “take action” - teachers wrote:
  
  o Students pledged to only drink water on Wednesdays and donate their extra money for the project. Students learned, not only how lucky we are to have water at our fingertips, but how it is our responsibility as human beings and Catholics to care for the less fortunate.
The impact that H2O for Life had on my students’ lives is hard to measure, but easy to see. My students not only walked miles and miles during our annual Walk4Water . . . but they’ve set up lemonade stands, volunteered at concession stands, and spoken to large groups of donors and volunteers.

Additional Themes and Outcomes

The second research question inquired about whether there were other outcomes that emerged from the study. While students and teachers showed evidence for the development of global competencies in their reflection artifacts, there were additional outcomes that emerged from the data analysis. I organized the outcomes into three larger themes that surfaced from the participants’ responses: (1) participatory transformation, (2) community connections, and (3) generative skills. Each theme will be explored in detail below.

Participatory transformation. The power of service-learning is that it is a participatory act connecting hands to humanity. Service-learning is experiential pedagogy “that is located in a learning process and not just a singular event” (Byker, 2016b, p. 274). Often the process of service-learning can be quite transformative; it changes people. For the students and teachers who participated in H2O for Life, the experience certainly seemed to be transformational. A number of teachers, for instance, spoke about the transformation using the word Ubuntu, which is derived from language groups in Southern Africa. Ubuntu means “oneness of humanity, a collectivity, community and set of cultural practices and spiritual values that seek respect and dignity for all humanity” (Goduka, 2000, p. 72). Ubuntu captures how humanity is connected through an interdependent ecosystem of human and environmental interaction (Assie-Lumumba, 2017; Tutu, 2008).

The correlation of the H2O for Life service-learning experience to Ubuntu is a strong indicator of the power of participating in H2O for Life. One teacher explained how her school was an example of Ubuntu as the school community unified together through H2O for Life service-learning fund raisers. Another teacher described the connection like this, “H2O for Life has allowed our students to connect with children globally in a way that has changed the students’ lives for the better.” The connection between Ubuntu and service-learning motivated one of the teachers in this study to have her students create African inspired art. The students sold the art they created as part of their fund-raiser for H2O for Life. Participation in H2O for Life was equally transformative for the students. For example, one recently graduated high school student shared how the H2O for Life stirred her to declare engineering as a major upon entering university. The student explained how she desires to engineer water solutions in the developing world because of her experiences with the H2O for Life service-learning. Another student shared how her experiences in H2O for Life encouraged her to develop a series of posters and postcards that raised awareness of the global water crisis. The motto, which was inscribed on each card, said, “If we have the privilege to know, then we should have the duty to act!” The examples above echo how participation in H2O for Life was transformational the student and teacher participants alike. Their participation in service-learning connected to a greater awareness of the water crisis and a deeper sense of humanity.
Community connections. A second outcome of participation in H2O for Life is the connections to the community. The H2O for Life service-learning experience bridges many communities both locally and globally. The study’s data show evidence of how important the notion of communities was to the project. In fact, after the words “water” and “H2O for Life”, community and communal were two of the most repeated words in the data. For example, one educator explained how the service-learning project became a communal experience where participants empathized with the “needs of other, reflected up on their global footprint, and made significant change for future generations.” Another teacher described how the H2O for Life service-learning project was framed around the question, “How can elementary students make their community and world a better place?” What a powerful and engaging question! The data illustrate how the H2O for Life service-learning project was a catalyst for young people to engage in multiple levels of the community including the: (1) family community; (2) school community; (3) local community; (4) state community; (5) national community; and (6) global community. The community engagement including guest speaker visits from the students’ parents and people in their community to share personal stories of life in several African countries. Guest speakers also discussed the importance of water and water conservation within communities.

The focus on and connections to the community are enduring qualities of H2O for Life, which participants discussed in their artifacts. Participants recognized a social element and a communal element to the service-learning experiences. The social was discussed as students and teachers work together to raise funds. Beyond the social, H2O for Life is also a deeply communal experience where students and teachers participate together in experiential learning events like the aforementioned Walk for Water. The communal nature of service-learning seems to further accentuate the power of the actual H2O for Life experience. Amitai Etzioni (1998), one of the foremost scholars about the importance of communities in society, talks about shared experiences like H2O for Life creates a web of relationships that unify the community. He argues that community experiences often situate how people conceive of philosophical questions like: What does it mean to be good? And what does it meant to be human? Etzioni (1998) explains how community is made up of two distinct characteristics: “First, webs of affect-laden relationships among a group of individuals, relationships that often crisscross and reinforce one another. And second, a measure of commitment to a set of shared values, norms, and meanings, and a shared history and identity” (p. 127). The H2O for Life connects with both these community characteristics as participants build relationships by being actively committed to the shared value of addressing the global water crisis.

Generative skills. A third outcome from the data is the generative skills that the H2O for Life service-learning experience helped to develop among the student participants. One thing was clear from the data, not only did the schools enthusiastically embrace the H2O for Life service learning experience but many of the schools committed to doing it again. In fact, the H2O for Life website states that more than 50% of the schools choose to participate with H20 for Life in the next year. So not only does the H2O for Life connect with communities, it has an impact year after year. Such a service-learning experience has a sustaining effect as the school community unifies together to take action in response to the global water crisis. For example, a teacher wrote, “Our work with H2O for Life truly captures the essence of service learning . . . we
cherish the important work that you do and greatly value our partnership! H2O for Life has become a tradition at the school and is now part of our ongoing school calendar."

The data illustrate many plausible reasons to explain H2O for Life’s perennial impact. First, the data show an altruistic effect that participants gain from the service-learning experience. Artifact after artifact testified to how the participants perceived their H2O for Life experience led to greater global awareness as well as contributed to the selfless concern for the health and well-being of others. A student participant, as an example of the altruistic effect, shared this reflection after the H2O for Life experience: “I now know more about what many people in Africa go through to get water. I appreciate the things I have like clean water and will be more cautious not to waste it.” Another student participant simply stated the service-learning experience made her intent to now “promote water awareness at every opportunity.” These comments testify how the experiential learning aspect of H2O for Life seems to generate a deep sense of awareness and altruism among many of its participants.

Second, the data also show how the H2O for Life service-learning experience fosters an integrated set of communication skills. The data illustrate the variety of skills—many of which are career and life skills—that participants practiced as part of their H2O for Life experience. The skills are part of the larger story about being involved with H2O for Life in order to make a difference. Thus, the generative aspect of H2O for Life includes many practical skills; what Yong Zhao (2012) would call world-class skills. From an analysis of the data, here is a list of the skills that participants discussed as part of their H2O for Life experience:

1. Arts-based skills: created art
2. Citizenship skills: took action to make the community a better place
3. Collaborative skills: worked together in teams to meet fund-raising goals
4. Communication skills: interviewed by local and national media; presented speeches
5. Creativity skills: created/presented PowerPoint presentations
6. Critical thinking skills: discussed global water crisis and water conservation
7. Design skills: designed brochures, posters, and other media
8. Entrepreneurial skills: implemented creative ideas for fund-raisers
9. Intercultural skills: shared information across different cultures and social groups
10. Interpersonal skills: communicated together as class and community to meet their goals
11. Intrapersonal skills: reflected on their service-learning experience
12. Geography skills: identified where H2O for Affiliated project and countries were located
13. Language arts skills: wrote business letters, thank you letters, and pen-pal letters
14. Organizational skills: planned several events and organized the stations
15. Presentation skills: presented research on the lack of clean water
16. Publishing skills: wrote and published a class book
17. Research skills: researched the global water crisis

This list—while not exhaustive—represents the variety of skills that young people gain through their participation in H2O for Life. Many, if not all of these skills, are ones that students will apply throughout their lives.
Recommendations

This paper has shed light on the impact of H2O for Life among students and teachers based in the United States. There were many positive findings including how the H2O for Life service learning opportunities provided powerful experiences for the development of global competencies. Even though many of the findings affirmed the robustness of the H2O for Life experience, the participants also shared critical and constructive perceptions of their experiences. Included in these perceptions was the desire for greater communication with partner schools in the country where the project was being funded. Teachers discussed how the H2O for Life service learning experience could be improved with: (1) pen-pal partnerships; (2) earlier provision of recipient school information so the students and teachers could communicate with the recipient school; (3) opportunities to use Skype to contact recipient schools; and (4) more picture and/or video evidence of the construction of water well, wash stations, and latrines at the recipient school. The students also discussed their desire for greater communication and relationship building with the students at the recipient school. For example, one student wrote, “I wish that we could have communicated more with our school and gotten their reactions and comments from them.” Another student lamented that she wishes her class could have written more Pen Pal letters with the recipient school.

Some of the participants’ constructive criticism reflects the realities of the extended timeline of development work. It takes time to organize and raise funds as well as to purchase and begin the actual construction of wells and latrines. The projects’ rural locales mean that communication can also be limited. Even uploading and sending picture images of project construction could be constrained because of limitations related to Internet access, digital bandwidth, or a consistent power source. App-based technologies on mobile devices like What's App (link: https://www.whatsapp.com/) might help address the communication constraints. What's App is becoming increasingly popular in the developing world because it is a free way to communicate via mobile devices as long as there is a Wi-Fi connection. Although Pen Pal letters take longer, it is an enduring form of communication. Partner schools in the US can always ask the students in the recipient school to draw pictures of their school and of the project construction process. This would provide a way of having visual evidence of the project when photographic evidence is delayed. Partner schools in the United States may want to explore International Mail Services provided by the United States Post Office or DHL Global Mail service. These services include options of purchasing the return mail postage for pen pal letters so the recipient school does not have to worry about the cost of the postage to mail their letters back to the United States.

From the view of a social studies educator, I have an additional critique of a finding in the data. My criticism relates to the geography of place especially related to the H2O for Life projects located in countries in Africa. As I analyzed the participants’ artifacts—especially the students’ reflections—I found a pattern in how the students discussed their project. Rather than being country specific, the students were more apt to refer to their project as “in Africa.” Of course, Africa is the world’s second largest continent and made up of 54 countries and a diversity of regions. H2O for Life service-learning is an effective experience for the development
of global competencies, but it should also be an immersive way of investigating geography. This includes having greater awareness for countries and regions of Africa.

I recommend that both H2O for Life and the teachers in partner schools focus more on the regional and country specific geography of Africa. The teaching tips from the website, AfricaAccessReview.org, provide further insights and strategies for doing so:

- Provide African perspectives and voices in politics, literature, and history
- Realize that Africa is a large continent that is comprised of many countries
- Have a map of Africa in the classroom and be country specific
- Emphasize ethnic groups and activities like soccer
- Choose visuals that show how people in African countries live in rural areas and in cities
- Remember that at least 40% of Africans live in cities
- Balance folktales and village tales with stories set in urban cities in Africa like Addis Ababa, Cairo, Cape Town, Lagos, and Nairobi
- Use ethnic group not tribe and house not hut (or use the actual term in the language for the dwelling – e.g., Swahili word for house)
- Avoid focusing solely on safaris and big game themes and focus on common everyday sights like agriculture, cattle, and chickens
- Introduce a variety of art and cultural forms and avoid the generic activities like mask-making without putting it in its cultural context or with the narrative tradition.
- Address problems in the regions and countries of Africa through a global and historical context, which includes a discussion of colonialism

These bullet points represent some ways to be more country specific other than just referring to Africa. Participating teachers are also recommended to use the H2O for Life website as a way of supporting geographic awareness among their students. For example, the website has a project description page (link: https://www.h2oforlifeschools.org/projects) which includes an outline of physical boundaries of project countries, a summary of the geographic location of the project, and pictures of the recipient schools and project development. Indeed, the H2O for Life website is a great place to start any geographic investigation and to be more country specific.

Conclusion

Overall, H2O for Life service-learning experiences make a strong impact on schools across the United States. This study examined that impact from the reflections and perceptions of 115 students and 43 teachers (n = 168). More research is needed related to changes in global competencies, for example, before and after participating in the H2O for Life service learning experience. Such data could be collected with a pre and post survey about attitudes and dispositions related to global issues like the water crisis. A future research agenda would include more international and comparative data. This report was US centric, but it would be fruitful to examine reflection and perception data from participants in recipient schools. In sum, the study found that the H2O for Life service learning project is a robust experience for the development of global competencies like investigating the world, recognizing perspectives, communicating ideas, and taking action. Like an ever expanding ripple on water, H2O for Life
has an enduring impact on the lives of students and teachers. The H2O for Life experience is transformational as participants gain generative skills through the network of the local and global community to respond to the need for clean water.

References


