

Chapter 12

Living History—Challenging Citizen Science and Youth Activism Through Historical Re-enacting

Kimberly Haverkos

In sixth grade, I told my teacher, Mr. Miller, that he was wrong. As a “good” student, this was unusual behavior for me. I normally remained very quiet and compliant in the classroom, following directions, accepting the daily dose of knowledge provided by the teacher. Mr. Miller’s lecture on the beginnings of the American Revolution, however, based on the traditional, clean narratives in our school history books, left out a number of what I felt were important details and information. Particularly of interest (to me anyway) was the story of George Washington’s rise to fame as a General and then President of this new country. Mr. Miller’s story told of Washington’s bravery in the French and Indian War, which then led to his role as a leader in our American history. As a child re-enactor of the French and Indian War and the American Revolution, I rejected that story because I had experienced a different one. I had “re-lived” the events of the French and Indian War. I had learned of Washington’s blunders that drove the colonies into the French and Indian War by re-enacting those events. As far as I was concerned Washington, although a revered leader, was also a flawed person who had made mistakes and the history books, and my teacher, were wrong.

My experiences as a historical re-enactor of the eighteenth century have stayed with me into adulthood. I continue to re-enact today and have introduced my children and my partner into the re-enacting world. And I continue to use my experiences as a re-enactor to question the common sense stories of history.

No one lives a perfectly clean and sterile life—there is messiness and contradiction in much of what we do. Re-enacting is not my profession; it is my hobby. Professionally, I am a science and teacher educator trained in critical pedagogy.

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(Re)Living history is not unproblematic. Science education is not unproblematic. Teacher education is not unproblematic. It is in this messiness and in the contradictions of each of these large and complicated ideas that I find spaces of possibility for critical pedagogy and activism, science education, and historical re-enacting.

As a teacher educator, part of what I attempt to do is educate my pre-service teachers in living out the habits of democracy. Educating students for the habits of democracy includes an engaged discussion with what it means to be a responsible citizen socially, civically, and politically. In a world where science legitimates (or de-legitimates) many social, civic, and political decisions, educating teachers and students about democracy necessarily includes an education engaged with science. Citizen science or active participation in scientific endeavors is considered one way to educate citizens, teachers, and students *about* science. But as Mueller et al. (2012) suggest, this removes science and scientific issues from their historical, cultural, and political contexts and does little to engage the learner with the issues at hand. They call for diverse geographic knowledge through community immersion as a remedy. Historical re-enacting provides an immersion community where traditional knowledges are legitimated, encouraged, and esteemed. Through engagement with both the natural environment and history of a place, historical re-enacting provides a platform to democratize citizen science by critically examining what is legitimated by both citizen and science. Historical re-enacting, this living of history, provides historical, cultural, and political meaning



Fig. 12.1 The author's family excited to be learning about the past

to scientific issues that are being addressed today. This chapter will seek to analyze how historical re-enacting can provide critical spaces for first raising questions around issues of citizenship; second, by raising questions about relationships with nature and science; and finally developing an understanding of citizen science rooted in youth activism through the traditional knowledges and experiences with nature that re-enacting history allow (Fig. 12.1).

What Does It Mean to Be a Citizen? Using the Past to Examine the Citizen in Citizen Science

In my portrayal of a white (occasionally privileged) woman of the eighteenth century, I must necessarily explore what rights I would have been able to exercise under the constraints of the time. I must understand and re-create the lack of rights that I would have had while living in a time where, although still not equal, I have and exercise a number of rights as a citizen of the United States. I must examine the privileges and lack of privileges that occur in both times and spaces and work not towards a resolution, but instead a continuous examination. It is a constant tug of war between what was and what is, between what has changed and what has not. It is an act that requires constant questioning and examining as I live my lives both in the present and the past: who counts as a citizen and what does it mean to be a citizen?

The concept of citizenship is complex and multivoiced with a number of thoughts about how best to prepare all students for their role as citizens. But, again, what does it mean to be a citizen? According to Kathleen Knight Abowitz and Jason Harnish (2006), “Citizenship, at least theoretically, confers membership, identity, values, and rights of participation and assumes a body of common political knowledge” (p. 653). This identity of citizen also confers responsibilities and required actions, but it is these actions, or lack thereof, that are often the center of current discussions around citizenship.

Questions about what constitutes good citizenship and proper civic education have also been fueled by a widely perceived crisis in democratic life and citizenship in America... [evidenced by a] Growing distrust in government and other key institutions, diminished trust in fellow citizens, eroding interest in public affairs, and declining voting rates ... Nationalist expressions, ironically combined with a renewed sense of our global ties to other peoples and nations, have further intensified and complicated the interest in citizenship and in the role of schools in shaping democratic citizens (p. 654).

Much like issues of literacy in other subject areas, a number of people have decried the lack of civics education in the American curriculum (Hutchins 2012). Instead of buying into assumptions about apathetic youth who are disengaged with democracy, they point to what is taught *and not taught* about being a citizen through the curriculum as part of the problem (Hutchins 2012; Knight Abowitz and Harnish 2006).

Citizen science, or the explicit linking of individuals' roles as both citizen and collector of scientific knowledge, points to possibilities for activism and participatory democracies through science but under the guise of which form of citizenship? Mueller et al.'s (2012) article on the future of citizen science, as well as the responses to that article, show citizen science itself is a contested and evolving term that questions what it means to be a citizen who does science within today's societal limitations, what a more democratic citizen science might look like, and challenges whose interests are served by the current forms of citizen science (Weinstein 2012; Calabrese Barton 2012; Cooper 2012). In terms of discourses around the words citizen and citizenship, these questions, while specific to science, echo the questions that are being asked by "...a vibrant and complex array of citizenship meanings that have more recently developed out of, and often in opposition to, these dominant discourses..." of citizenship that reproduce class, race, gender, and ethnic divides and hierarchies (Knight et al. 2006, p. 654). Feminist, cultural citizenship, reconstructionist, queer and transnational discourses around citizenship challenge traditional notions of citizenship and agency within citizenship, particularly those found in schools. In light of these critical discourses of citizenship, Knight et al. (2006) are worth quoting at length here:

The emergence of a strong array of diverse critical discourses of citizenship challenges traditional definitions of membership and pushes against traditional boundaries of agency, identity, and membership. Agency is the idea that individuals and groups act—that citizenship is something that happens when people are engaged in activity for, with, on behalf of, or even against others. The goodness of agency seems to be a key assumption in all understandings of citizenship...but feminist, queer, cultural, and transnational discourses question traditional notions of civic agency. Where do citizens do their work? ...Do they engage in discourse or ironic performance, empathetic dialogue or storytelling, conflict or peace-making? Do they engage their discourse through traditional public forums or through worldwide electronic transmissions? ... The question of civic identity... [challenges] us to look at the histories of who has been welcomed into the civic realm and who has not. In light of these histories, critical citizenship discourses challenge the very constructions of some of our most cherished political identities (p. 680).

The citizen science movement when seen through the critical discourses available around these definitions of citizenship allow for the possibilities of contextuality and democracy in and through science and agency through activism. As Mueller et al. (2012) point out, "...we need to find ways to include youths not only in pedagogy that heightens epistemic development but also in schooling where they have opportunities to engage real issues through their activism" (p. 11). As one avenue forward, I believe that a citizen science that is informed by the living history of a place may provide some of these opportunities.

The integration of citizenship and science discourses through citizen science (in its many and contradictory versions) is being challenged, explored, and advanced within social studies classrooms. Social studies also allows for the contextual necessity of understanding the history of a place and how that history informs both the present and fluctuating possibilities of the future. According to Hutchins (2012), increasing interdisciplinary connections by teaching civics across the curriculum allows for students to "...experience increased relevancy in subjects in which they

struggle...” by “...leverag[ing] student interest in current events” (p.72). However, this interest must attach the past to the present by linking the historical context of multiple times to a place. The importance of history in traditional discourses of citizenship are well documented as a way to reinforce and reproduce the values of an imagined past in the present, but history also plays an important, if often unrecognized role in critical discourses of citizenship. The history (of time, places, and citizenship) that students are taught in schools is often sterilized—the messiness and contradictions removed in order to provide easy access to an imagined past. But the past, our history, is not the tidy package presented in school textbooks as I reminded my sixth grade teacher. The past is made up of a multitude of voices, stories, actions and reactions that are often contradictory, confused, and misrepresented. Very often we hear the story of Abigail Adams, her historically structured feminism, and her letter writing campaign to her husband, John Adams, with her pleas that while he constructed the new “code of laws” of the land, he “Remember the ladies.” What we don’t often hear, discuss, or acknowledge, is John’s response to Abigail, “As to your extraordinary code of laws, I cannot but laugh (Bober 1998, p. 73).” Although our modern expectations create an equal partnership between these two historical figures, a closer reading of their constant letter exchanges reveals the realities of the eighteenth century and social expectations, which are in stark contrast to our sterilized version of their relationship. By engaging a feminist discourse of citizenship and looking at the relationship between Abigail and John Adams, we can better understand feminist calls today for the dismantling of civics discourses that are attached to citizenship as a performance within the *public* sphere. Abigail Adams’ work in the domestic sphere was as engaged with ideas and actions of citizenship and activism as her husband’s actions were in the public sphere. In terms of citizen science, we can again look at the feminist discourse around citizenship and ask where does legitimate science occur—in the public sphere? The domestic sphere? Who is able to perform that science? What actions constitute citizenship linked to citizen science? What actions *should* constitute that citizenship?

For students to be engaged as activists within citizen science, the historical context of the place that they are engaged with must provide access to an untidy past, to hidden voices and stories, to the complexities that created the situation that they are now engaged with. Through historical re-enacting, through a re-living of the past, some of those complexities can be (re)experienced. Jon Hunner (2011) discusses the Historic Environment Education (HEE) movement, seeking ways to democratize the past, but also change the future. “With the motto of “think historically, act locally,” teachers and museum professionals are linking local and environmental resources to enliven the classroom, challenging students to incorporate themselves, their communities, and their surroundings into complex encounters of place and past” (Hunner 2011, p. 33). While Hunner (2011) discusses the time travel aspect, the living of history to engage with the historical context of local places, the potential to engage with the environment of the place and to engage with citizen science through activism and the history that created that environment is potent. Students working with the quality of the water in a local stream must understand the uses of that stream throughout the past in order to both understand the present predicament

and change the future expectations of usage within that stream. To collect water samples may help students learn *about* water quality within that stream, but *engaging* students in a lived experience of how that stream was used from the past to the present brings in the complex political, social, ethical and moral discussions necessary to change the ways in which that stream is used in the future. Mueller and Tippins (2012) call for geographic knowledge to be rediscovered before it becomes extinct, but that rediscovery is necessarily historicized. Re-enacting the past allows a possibility for access to geographic knowledges that were once common place. It also engages the student in the physicality of the place, allowing connections between humans and environment to come to the fore. As Mueller et al. (2012) suggest, without this geographic knowledge, and without an understanding of the history of the people *and* the place, students and other citizen science activists may miss important patterns, possible future actions, or marginalized voices often excluded (historically and presently) from decision making as both citizens and scientists. Historical re-enacting is one point of entry into the messiness required of activism, but it is also a way into necessary discussions that allow for a dual focus on what it means to be a citizen activist and what it means to do science.

Local History and Knowledges of Nature and Science

Katie Davies (2010) laments the fact that "...the thought that a learning society should produce engaged citizens with the capacity to lead social change has all but disappeared from public discourse" (p. 10). Pushing for the development of a worldwide learning society, Davies suggests that "[o]nly by listening to each other and sharing what we know..." throughout the course of our entire lives, focusing on life-long learning, and learning from constant access to educational experiences can humankind hope to become a sustainable society (p. 10). She goes on to suggest, "It is also possible to learn from *the historical, place-based experience* of living sustainably in local communities, which is passed on through the generations" (p. 11, *italics added*). Our connections to the past are constantly competing with our experiences in the present, which drive our evolution of knowledge, our experiences of the world around us, and occasionally disrupt our plans for the future. John Dewey reminds us, "...knowledge of the past is the key to understanding the present" (1944, p. 214). I would add that the past is also necessary to understanding possible futures in a way that lessens the marginalization of both others and nature and democratizes the ways in which decisions are made around issues of citizenship and science.

In discussing ways to engage the prospective teacher in action research, Mueller et al. (2012) state, "In the process [of engaging with the cultural practices of the community] they learn that the teaching and learning of science must move beyond the transmission of facts to acknowledge the diversity of *experiences, voices, traditions, and histories* of people" (p. 9, *italics added*). The same can be said for students who engage with the living history of a place (Hunner 2011; Hutchins 2012;

Ohn and Wade 2009; Weglein Kraus 2008). Living history can be a process of engaging students with science by connecting to students' prior knowledges about local places and environments. Living history is dynamic and moving unlike the stagnant pages of their history books (and often the science classes they experience). Engaging with living history also brings to the fore the importance of lived experiences. While re-living history is not unproblematic, it does provide "...a more human coloring, a wider significance, to [a student's] own study of nature. His knowledge of nature lends point and accuracy to his study of history. This is the natural 'correlation' of history and science" (Dewey 2010, p. 57). Hunner (2011) also suggests this correlation, "In addition to providing living history experiences, HEE [historic environment education] uses oral history, heritage preservation, archeology, and naturalist studies to make history come alive," at the same time engaging the student with their history, their environment and nature (p. 34).

Over the course of 30 years of re-enacting the eighteenth century, this connection between living history and nature and living history and science has become very clear for me. As children we learned about our environment as a way to understand the history we portrayed. We learned about edible plants found in the woods of Western New York, the importance of clean water access to those we portrayed, early science studies and experiments, the loss of scientific information because of disease, famine, and war. My brothers and I compared these events and experiences of the past with our understandings and experiences of the present. For me, this lead to a future in science education that is intricately interwoven with my lived experiences of the – way – past. Teachable moments are everywhere I look in the lived history that I perform. As a way to make explicit and continue to learn about those connections, I still find myself asking questions about the different tasks that I perform as a re-enactor. What process did those living in the eighteenth century use to accomplish this task? How is nature part of that process? What science is involved in this task? How does science and/ or technology affect this process today? These are not yet activist oriented questions, but placed into their historical, social, and political context, they can become starting points for activist inquiry and citizen science.

If, for example, we look at the domestic sphere of the eighteenth century home and the production of medicines, we can begin to see connections between our past and our present. The health care of the family was the responsibility of the woman of the home—What process did those living in the eighteenth century use to accomplish this task? The traditional, gendered knowledges of how to produce and apply plant-based medicines was passed on from mother to daughter, grandmother to granddaughter. Willow bark teas relieved headaches—How was nature part of that process? Today, we know that the chemical properties of that bark contain the base compounds we use for the production of aspirin—What science is involved in this task? Today, a multitude of pain relievers and other drugs are available through chemical production in factory settings—How does science affect this process today? What questions might students develop from this knowledge of the past that will lead to activist tendencies? Through living the history of the past, interest in the more current outbreak of fungal meningitis due to the contamination of steroid

Fig. 12.2 The author's daughter moves kernels of corn into a mortar and pestle to make corn meal. The production of food is a topic where living history provides access to a number of inquiry focused questions and possible activism. What process did those living in the eighteenth century use to produce their food? How was nature part of that process? What science was involved in this task? What is science and/ or technology's role in food production today?



shots may be better understood as part of the evolution of both natural and scientific knowledges. Re-enacting the past and understanding the human to nature/ nature to human connection of the past may also provoke serious questions about pharmaceutical companies and the business of medicine today. What role does nature play in the production of medicine today? This question, driven by a lived and local experiential knowledge of the past, links the student to more global and abstract ideas about how science and society interact today. These explorations may also provide access to activist movements that seek to protect the intellectual property rights of indigenous cultures and the knowledges they possess around a plant-based medicine today. Additionally, experiences of the past may provide students with a more democratic vision of citizen science as they examine what and who is legitimated by science throughout history into the present (Fig. 12.2).

Re-enacting History: Rooting Activism in the Past to Move Forward

Living history is often seen as a way to engage students with the social studies curriculum. Whether students are taken to watch a re-enactment of a past battle or a famous event, or they are invited to participate in a living history experience playing the role of someone out of the past, the interdisciplinary possibilities move way beyond the social studies classroom. Connecting science to the history of a place prior to the curricular industrial revolution is an important endeavor. Exploring the ways in which humans interacted with the world around them provides a unique

perspective that is often overlooked in school curricula, particularly curricula that ignore the messiness of living.

Mueller et al. (2012) suggest that we must "...promote youth activism through citizen science as a pedagogy in which teachers and their students gather information to make the most informed decisions about potential consequences..." (p. 11). Without the historical perspective, those decisions remain unformed and un-informed. In particular, youth activism possibilities remain unconnected to a larger frame of reference that allows the influences of the past to become visible and explicit. Hutchins (2012) describes the benefits of the civic oriented experiences his students engage in as they come to realize the relevance of history in their lives. They come to understand that they, themselves, are making history. This pushes them to invest in different forms of activism available to them, to seek out and understand places that require change, and to passionately engage in being agents of that change. Bringing living history into this citizen-oriented perspective creates a broader understanding of one's place in history as well as a better understanding of how the past influences the present and how the present creates the future. As Hunner (2011) points out, "often, participants who relive the past also engage with issues in their own lives" (p. 6). Focusing student educational experiences on (re)living history within specific localities allows for different projects and different forms of activism to develop that meet the specific historical, cultural, and natural needs of the community. This allows for a citizen science that is local and engaged because the issues and activism come from the questions students engage with through their newly gained historical perspective. Because this perspective remains grounded in the local, natural environment and history, students can move to a more global realization of what activism may look like in other places while understanding the importance of local, traditional knowledges, cultures and histories.

This form of activism that uses living history to make sense of the present requires a new way of looking at re-enacting the past. It can no longer be seen as simply a way to make history come alive. Rather, it becomes a way to engage students with the issues that they face in their current lives. Jessica Weglein Kraus (2008) makes a distinction that is important to acknowledge here. "If history is about considering events, their antecedents, and their consequences, heritage...uses history...as a means of affirming...identities. It's about finding roots" (p. 145). Using examples of her experiences re-creating histories from around the world for students in the United States, Weglein Kraus is leery of using re-enactments to "... shock [students] out of their complacency in order to teach them. This coercion seemed an inappropriate weapon in the educator's arsenal" (p. 147). Her examples represent global experiences of history that are not within students' local realities. The unattainable location and history is made available through a dramatic and stylized re-living of an historical event, but one that lacks the context of place-based and local experiences for the students. A citizen science that uses historical re-enacting to explore possible avenues of activism looks to place both the history and the heritage of a localized community. It looks at the roots and identities that are established within that local place, particularly those that have been ignored by traditional histories, and follows them to the issues and challenges faced by the current

community. It explores the historical consequences of events in real time—living and re-living a timeline that leads to a specific moment ripe for change. It does not seek to coerce or guilt students into action, but instead looks to students to lead the way through the messiness of the stories of the past into the possibilities of a future history. Weglein Kraus is worth quoting at length:

To my mind *stories are essential*. They are the means through which we organize and communicate our experiences, interpret the world around us, and come to terms with who we are and where we've been. But for those of us charged with the responsibility of transmitting history, in order for narrative to be more than personal revelation, a wrenching tale, or a dishy bit of gossip, *it needs to be tied to analysis and inquiry*. (2008, p. 149, italics added)

What stories are told in our students' history books? What stories can our students tell about their past, local history, and role in the environment? It is in the ability to tie these stories of the past to the present through analysis and inquiry that makes historical re-enacting such a valuable tool for a citizen science that seeks to democratize both the acts of citizenship and the practices of science (Fig. 12.3).

Where might historical re-enacting find a place in current school experiences? Where might the activist tendencies best be brought to focus? Currently, there is a move to integrate service learning in schools as an act of citizenship and democratic participation. Ohn and Wade (2009) share that 64 % of public schools and 83 % of public high schools require students to participate in service learning projects where they are to: meet community needs, build collaborations between school and community, learn curricula, reflect on their experiences, use their new knowledges, learn beyond the classroom, and develop and foster a sense of caring. As addressed earlier,



Fig. 12.3 Learning traditional knowledges: starting a fire with flint and steel

normative views of students imply that students' participation as citizens is weak, at best, suggesting students are consumers of resources, passive victims in need of help, and recipients of others' efforts (Kielsmeier 2011). Service learning challenges these assumptions and instead sees students as resources, active producers of help, and leaders willing to give of their time and knowledges because it legitimates their own experiences and knowledges, recognizing that students, too, are producers of knowledge. "Fundamentally, service-learning challenges the traditional identities and roles of students and calls on them not only to consume knowledge but also to produce it" (Felten and Clayton 2011, p. 82). Through historical re-enacting and service learning projects, students' knowledges and skills interact with their re-enacted and present experiences to generate both learning and possibilities for activism within a community where the interactions, connections, and relationships are recognized as a way toward social change. Service learning, when linked to a democratized and contextual citizen science through historical re-enacting, can normalize critical thinking, connectivity, relationships, and learning, which holds great potential for bringing to the fore the issues that center equity and the environment in the quest for just social change.

While each of these alone is a laudable goal, according to Ohn and Wade's study (2009), the effectiveness of the service learning project depends on the citizenship beliefs being shared in the classroom. The ability to build reflective and critical thought into the process is not as simple as performing acts of service. Similar to Mueller et al.'s (2012) concerns around citizen science as being *about* science rather than *engaging* in science, Ohn and Wade (2009) challenges the service learning project and learning by doing, noting that there is little connection to what they term "doing by thinking." There is a lack of reflection, lack of diverse perspectives presented, and an inability to construct historical narratives. Missing from the service projects is a historical perspective rooted in multiple, lived histories—the stories that come from a lived experience of the past which allows for a critical reflection of diverse points of view. A lived sense of history experienced through re-enacting the past provides access to civic competence and acts of citizenship, including creating and democratizing experiences of citizen science. A program that links service learning and historical re-enacting to a specific environment may provide the impetus for moving from a position of learning *about* to being *engaged in* that is needed for successful projects that link acts of citizenship to practices of science through activism.

Redefining Citizen, Citizen Science and Youth Activism

Through re-enacting the past, it is impossible to participate without asking "What has changed?" This question drives the historical experience, environmental experience, and possibility of future activism if harnessed and facilitated through

educational experiences. Growing up as a re-enactor, we often spent time re-enacting the eighteenth century along the banks of the Erie Canal in New York. The Erie Canal was built in the early nineteenth century, but there we sat in the twentieth century, re-creating the eighteenth century alongside a nineteenth century man-made waterway. The question of “what has changed?” was not only a social historical question, it was also a scientific one that explored the waters, the environment, and the nature that we engaged with during these events. We were able to experience the past, the present, and think about the future in ways that acknowledged the connections we had to that specific place, the histories that created and sustained that place, and the environment it had been, the environment it was, and the environment it possibly could become. In the past 10 years, the United States has celebrated a number of historical anniversaries that we as re-enactors have been able to participate in: the 250th anniversary of the French and Indian War, the 200th anniversary of the War of 1812, and the anniversary of the Lewis and Clark Expedition. As re-enactors, we are able to explore, story, and share a number of diverse and often marginalized voices of those historical moments through an understanding of the local historical context and the traditional knowledges of the past that are rooted in scientific knowledges of today. This linking of the past to the present by exploring what has changed allows for inquiry driven activism led by students on any number of fronts. It democratizes the process of citizen science because it challenges students to be citizens of the past, the present, and the future through their own knowledges of the past and the present as they make decisions about the future.

Historical re-enacting, as explored in this chapter, challenges the ways in which we define citizenship. By examining who counted as a citizen through the stories of the past, living history forces an examination of who counts as a citizen in the present. If we are working toward a more democratized vision of citizen science, one that starts from the bottom up and is immersed in place-based education, those activities that challenge the normalized boundaries of citizen and what actions constitute acts of citizenship are important to explore. Additionally, living history necessarily puts students into contact with nature and the sciences of the past. These experiences, when facilitated by questions that compare the past to the present can drive the inquiry required to frame democratized citizen science and youth activism around local, community based issues. Finally, by tapping into students as resources of traditional knowledges, producers of knowledge, and critically and historically aware of the place and environment they experience daily, youth activism begins with an exploration of history. The reliving of local histories can link student driven inquiry to a specific environment in order to move from a position of learning about to being engaged in acts of citizenship and practices of science through activism (Fig. 12.4).



Fig. 12.4 The author's son experiencing his first battle. What questions, stories, and acts of citizenship or science inquiry might arise from this experience?

References

- Bober, N. (1998). *Abigail Adams: Witness to a revolution*. New York: Aladdin Paperbacks.
- Calabrese Barton, A. (2012). Citizen(s) science. A response to "The Future of Citizen Science." *Democracy and Education*, 20, Article 12. Retrieved October 27, 2012, from <http://democracyeducationjournal.org/home/vol20/iss2/12/>
- Cooper, C. B. (2012). Links and distinctions among citizenship, science, and citizen science. A response to "The Future of Citizen Science." *Democracy and Education*, 20, Article 13. Retrieved October 27, 2012, from <http://democracyeducationjournal.org/home/vol20/iss2/13/>
- Davies, K. (2010). Sustainable minds. *Alternatives Journal*, 36, 8–11.
- Dewey, J. (1944). *Democracy and education: An introduction to the philosophy of education*. New York: The Free Press.
- Dewey, J. (2010). *The school and society and The child and the curriculum*. Lawrence: Digireads.com Publishing.
- Felten, P., & Clayton, P. (2011). Service learning. *New Directions for Teaching and Learning*, 128, 75–84.
- Hunner, J. (2011). Historic environment education: Using nearby history in classrooms and museums. *The Public Historian*, 33, 33–43.
- Hutchins, W. (2012). Groomed for citizenship. *Educational Leadership*, 69(7), 70–73.
- Kielsmeier, J. (2011). Service learning: The time is now. *The Prevention Researcher*, 18, 3–7.
- Knight Abowitz, K., & Harnish, J. (2006). Contemporary discourses of citizenship. *Review of Educational Research*, 76, 653–690.

- Mueller, M. P., & Tippins, D. J. (2012). Citizen science, ecojustice, and science education: Rethinking an education from nowhere. In B. J. Fraser, K. Tobin, & C. McRobbie (Eds.), *Second international handbook of science education* (pp. 865–882). Dordrecht: Springer.
- Mueller, M., Tippins, D., & Bryan, L. (2012). The future of citizen science. *Democracy and Education, 20*, 1–12.
- Ohn, J. D., & Wade, R. (2009). Community service-learning as a group inquiry project: Elementary and middle school CiviConnections teachers' practices of integrating historical inquiry in community service – Learning. *The Social Studies, 100*(5), 200–211.
- Weglein Kraus, J. (2008). Petticoats and primary sources: Lessons learned through public history. *Journal of Archival Organization, 6*, 141–150.
- Weinstein, M. (2012). Schools/citizen science. A response to “The future of citizen science.” *Democracy and Education, 20*, Article 6. Retrieved October 27, 2012, from <http://democracy-educationjournal.org/home/vol20/iss1/6/>

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