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Melissa Reed
Emporia State University

Courtney (Weber) Klassen
Prairie Hills Middle School

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Place-Based Education: People, Places, and Spaces for Interdisciplinary Literacy Learning

Melissa Reed

Emporia State University

Courtney (Weber) Klassen

Prairie Hills Middle School

Authors' Notes

Melissa Reed, Ph.D., is an associate professor in the Department of Elementary/Early Childhood/Special Education in The Teachers College at Emporia State University, Emporia Kansas. She has 20 years teaching experience in K-9 classrooms. She also served as an instructional coach. The past 14 years have been spent teaching literacy courses at Emporia State University to prepare teacher candidates. She has presented at state, national, and international conferences. Her research interest focuses on literacy learning environments, learning styles, technology integration, brain-based learning, adolescent literacy, mindfulness of the whole child, multicultural education, diversity and inclusion.

Courtney (Weber) Klassen teaches middle school math and STEAM at Prairie Hills Middle School in Buhler, Kansas. She is an Emporia State alumni where she graduated with her B.S.E. with an emphasis in middle school math. She recently completed her Instructional Specialist master's degree with an emphasis in STEM education.

Abstract

Place-based education (PBE) encourages teachers to create authentic learning communities of real-world experts outside of the regular classroom setting. Literacy strategies were used to support understanding of content. This article will explore the results of teacher action research in creating interdisciplinary literacy opportunities in the real world using a PBE model. What impact does PBE have on motivation and interest of learning in this interdisciplinary setting? The advantages and challenges are examined through the use of interviews, exit slips, and antidotal records during a summer camp experience with students in grades 4-6. The findings from a research project involving interdisciplinary literacy in various place-based settings will be explored, along with the places and lesson ideas used with children.

Keywords: place-based education (PBE), interdisciplinary literacy, inquiry learning, action research

Place-Based Education: People, Places, and Spaces for Interdisciplinary Literacy Learning

Place-Based Education (PBE) occurs when children, teachers, and adults in the community use the social, cultural, and natural environment in which they live as an inquiry-based learning laboratory for K-12 to gain knowledge and skills across the curriculum (Sobel, 2005). Although similar to Project-Based Learning (PBL), a teaching methodology that utilizes student-centered projects to facilitate student learning (Mergendoller, 2006), one main difference is the ongoing inclusion of the real-world experts within these authentic learning communities often located outside of the regular classroom setting. Some theorists believe that such teaching methods such as PBL or discovery learning are in direct conflict with cognition research that demonstrates not only that learners in the novice stage do not attend to critical problem features or employ effective problem-solving strategies, but that they should not necessarily be encouraged to do so. Kirschner, Sweller, and Clark (2006) assert that the ideals of constructivist, project-based learning may miss the mark by leaving too much at the discretion of novice learners.

There is, however, a growing body of research that supports PBE and encourages teachers to use the schoolyard, community, public lands, and other special places as resources, turning communities into classrooms. A place-based curriculum fundamentally changes the traditional curriculum framework and, thus, the culture in which children learn. The PBE framework shifts the educational system from an outdated industrial input-output linear model to the more dynamic interdisciplinary approach of the information/digital age based in action research (Fly, n.d.). In the Place-Based Model, the goal is to create opportunities for students to think independently (inquiry), collect, analyze, synthesize, and critique information (data), address community opportunities and concerns, and create knowledge and innovative ideas.

Today's English Language Arts standards require learners to become problem-solvers and critical thinkers and to provide evidence to support their claims; therefore, we must also provide authentic opportunities to apply and implement new learning (Lieberman, Gerald & Hoody, 1998). Thus, educators need to know how to provide ways for learners to gain information across multiple resources, discern what is relevant to the topic at hand, and then present it back through diverse multimedia formats that demonstrate their understanding.

A student's metacognitive skills can be developed through inquiry (Wells, 1999). Students do not just have to memorize material and then reiterate it on a test; instead, they can develop skills for researching, organizing, thinking abstractly, questioning and reflecting. Teachers using instructional methods based on recitation and direct instruction may find that inquiry teaching challenges them to develop new content knowledge, pedagogical techniques, approaches to assessment, and classroom management (Edelson, Gordin, & Pea, 1999; Hancock, Kaput, & Goldsmith, 1992; Marx, Blumenfeld, Krajcik, & Soloway, 1997). Inquiry learning challenges students, too. It requires them to collaborate with peers, construct usable knowledge by linking new and old ideas, relate new content to their lives in and outside of school, and self-regulate across the weeks that an inquiry project might unfold (Blumenfeld, Soloway, Marx, Krajcik, Guzdial & Palincsar, 1991; Krajcik, Blumenfeld, Marx, Bass, Fredricks, & Soloway, 1998).

Literacy extends beyond simply reading and writing when learners are expected to decipher information from listening, speaking, and viewing, as well. Inquiry combines the student's social world with the curriculum, which helps the child understand both better. In other words, when students can relate what they are reading in a text to the issues in their own lives it creates a deeper understanding (Myers, 2001). Another major goal PBE addresses is

communication skills. A PBE environment allows students to develop literacy skills by reporting their findings through publications (written and electronic) and presentations (speaking and listening) to their peers and the community (authentic audiences). In today's world, with knowledge and skills constantly evolving, students need to learn both content and process skills, including the skills and commitment to be lifelong learners (Falco, 2004).

In the traditional learning model, as exemplified by Socrates, teachers are the holders of knowledge and skills which are passed on to their students. In today's world, with knowledge and skills constantly evolving, students need to learn both content and process skills, including the skills and commitment to be lifelong learners. To be lifelong learners, students need to be grounded in inquiry, which is about process or "how to think." When the inquiry approach is fully implemented, however, the result will be growth in knowledge and skills (content). As inquiry is internalized as a way of thinking, students then have the basis to become the thinkers of the future, particularly in science, technology, engineering and math (STEM). Ultimately PBE is about learning, discovery, and engaging in teaching, research, and service (Hollander & Saltmarsh, 2000).

In the Place-Based Model, everyone is a learner. This calls for a cognitive shift in how teachers perceive themselves in the learning environment. It frees them to be collaborative-learners with the students and partners in the community. They no longer feel the need to "know it all" or teach only "what they know." Their role is to be a facilitator of learning and a co-learner. This approach is advantageous because it removes the artificial barrier between students and teachers that is created when teachers are viewed as the "power holders" and "dictators of knowledge." PBE creates an environment that fosters more genuine relationships between teachers and students (Bartosh, 2004).

This article will explore the results of action research (Mills, 2000) in creating interdisciplinary literacy opportunities out in the real world using a PBE model. The findings from a research project involving interdisciplinary literacy in various place-based settings will be explored, along with the places and lesson ideas used with children.

Overview of Project

The place-based learning project explored learning in various locations in the community. A preservice intern and her university supervisor carried out the project. The preservice intern planned the lessons and served as the teacher for the students in a summer camp-like setting. The university supervisor served as the mentor and co-researcher. Both met for four consecutive weeks with the students for two days each week. Each week, the camp participants and teachers traveled to a different location and learned from a variety of experts. Overall the participants explored four different places in our community and relied on a variety of experts (guest speakers) to help us deliver the content lessons. A guest speaker conveys current, realistic information and a perspective on a subject that is not available from textbooks (Mullins, 2001).

Registration forms were sent to every principal in the residing county. Sixteen students who had completed grades 4-8 participated in the project with an even number of boys and girls. Locations were chosen that would be of high interest to our student population. We worked to secure experts at each location and then spent time planning activities that would coordinate with the information presented by the expert to insure that each student participant mastered the conceptual content through a collaborative effort.

Data Collection

The project methodology was teacher action research. This methodology is frequently used in the field of education. Action research can be traced back to Kurt Lewin, a social

psychologist and educator whose work on action research was developed throughout the 1940s in the United States. His process was cyclical, involving a “non-linear pattern of planning, activating, observing, and reflecting on the changes in the social situations” (Noffke & Stevenson, 1995, p. 2). Action research is a process in which teachers examine their educational practice systematically and carefully, using the techniques of research. It is based on the following assumptions:

- Teachers work best on problems they have identified for themselves
- Teachers become more effective when encouraged to examine and assess their own work and then consider ways of working differently
- Teachers help each other by working collaboratively
- Working with colleagues helps teachers in their professional development.

(Watts, 1985, p. 118)

Action research specifically refers to a disciplined inquiry done by a teacher with the intent that the research will inform and change his or her practices in the future. This research is carried out within the context of the teacher's environment in which the teacher works on questions that deal with educational matters at hand. After each session, the university supervisor met with the preservice intern to follow the teacher action research model by reflecting, adjusting instruction, and providing guidance in changing teaching practices for the next session.

Qualitative data was collected in the form of exit slips, pre/post surveys, and student interviews in order to explore our research question: What impact does PBE have on motivation and interest of learning in an interdisciplinary setting? Literacy strategies were used in each setting to research and understand the content. The first thing we did at the beginning of the

camp was to ask the students to fill out a survey (Figure 1.) to express their attitudes toward school (what they liked, didn't like, etc.). At the end of each day, the students were required to fill out an exit slip (Figure 2.) on which the students recorded three things they learned, one thing they loved about the day, and one thing they did not like.

The exit slip strategy is used to help students process new concepts, reflect on information learned, and express their thoughts about new information. This strategy requires students to respond to a prompt given by the teacher and is an easy way to incorporate writing into many different content areas. According to Albers (2006), teachers must also be aware of the interests and questions that students will bring to their learning and be flexible enough in their planning to enact changes based upon students' responses. The exit slip strategy allows educators to adapt to students' interests and inquiries on a given subject. This strategy can also be used to publish student comments, ideas, and opinions. Exit slips provide students with a recap of the previous day's lesson; they give students confidence that their voice matters (Wagner, 2005). Furthermore, the Exit Slip strategy is an informal assessment that will allow educators to adapt and differentiate their planning and instruction.

Formative assessments are important in the classroom so that the teacher can see what the students are learning and adjust teaching strategies based on input from the student. Black and Wiliam (1998b) argue that formative assessment, properly employed in the classroom, will help students learn what is being taught to a substantially better degree. They support this argument with evidence from their research review (1998a), a meta-analysis in which they conclude that student gains in learning triggered by formative assessment are "amongst the largest ever reported for educational interventions" (p. 61).

On the last day of camp, the students were interviewed about how they felt about school and how it compared to PBE. The students were given post-surveys to determine their attitudes toward PBE.

The Places Where We Learned

Next we will take a look at the different places that we visited, the experts we relied on, and the activities the students participated in each week. Before going to each location, the preservice intern (teacher) met with the experts and together they determined the learning objectives that would to be presented there. The teacher then met with the university mentor to collaborate on ideas for activities and strategies to invite deeper learning beyond the initial content information presented by the experts. This collaborative planning and coordination of learning opportunities occurred at each location with all the experts.

Put me in the zoo

For the first week of the project, we headed to our local zoo. The following outlines our time spent at the zoo:

Experts	Teaching Objectives	Activities
zoo docent	<ul style="list-style-type: none"> To understand the important role a zoo plays in animal conservation. To provide a history of the animals in the zoo. 	<ul style="list-style-type: none"> Zoo Walk Hands-on interactions with the animals. Provided information on how the animals arrive at the zoo. Provided learning for the zoo's role in conserving and protecting animals.
zookeepers	<ul style="list-style-type: none"> To provide an understanding of the special diet of each animal at the zoo. 	<ul style="list-style-type: none"> Kitchen tour and observation of food preparation.
zoo Staff	<ul style="list-style-type: none"> To provide an understanding of the day-to-day care of animals in a zoo. 	<ul style="list-style-type: none"> Observation of daily care of animals.

teachers	<ul style="list-style-type: none">• To integrate math, literacy, and art into the science of animals.	<ul style="list-style-type: none">• Math: How much does it cost to feed an animal at the zoo each year?• Art: Create a new animal for the zoo using clay. Hybrid animals were encouraged.• Writing: Animal Haikus• Journal writing prompt: Write a letter from a zoo animal's perspective.
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Our time at the zoo started by meeting the zoo docent at the gates of the zoo. The docent took our group on a behind-the-scenes tour of the zoo. The students had an opportunity to visit the zoo kitchen and observe how the food is prepared for the animals. They observed the zookeepers' routine for feeding and caring for the animals each day and learned some unique facts about each of the specific animals housed at the zoo. They also had an opportunity to learn the background of how each animal arrived at this particular zoo. The zoo had an Education Outreach Center on site, which provided classroom space for the students to learn about animal conservation and endangered species from the experts. The students were also allowed to handle some of the animals while in the center with the docent.

Interdisciplinary activities and learning at the zoo. Since the zoo staff had provided us the background information about the animals, we balanced the learning by integrating other interdisciplinary activities to reinforce the conceptual learning while having fun. The students were asked to recommend to the zoo staff a new animal that should be added to the zoo exhibits. This could be a new hybrid creation of his or her own, or an animal that they had not seen in the zoo that they thought should be added. They were asked to consider the care the animal might need from the zookeepers, where it had resided before arriving at the zoo, the types of food that it might eat, and any special requirements to maintain its living environment at the zoo. The

students drew sketches to capture their ideas of the new creations that would be added to the zoo. The students were provided with air-dry modeling clay and asked to create a new animal based on their ideas and sketches.

While the clay dried, the students created a zoo “habitat” from boxes to create a diorama to demonstrate the design for the new addition to the zoo. Exhibits at the zoo provide signage for visitors to learn about the animals. Many of the students returned to the various zoo animals to confirm the type of information provided on the sign to maintain accuracy on the signs they created for display for their new exhibits. After painting their animals and placing them in their diorama, the students placed the signs they had created outside of their new “exhibit” to provide visitors with information on their creations.

The amount of food and the cost to feed the zoo animals were provided for the students. This allowed the students to estimate an annual cost to feed specific animals in the zoo. In order to reinforce math concepts, the teacher provided scenarios using the data to calculate various costs in relation to maintaining the animals upkeep at the zoo. This was also tied to the ecology and endangered information that was provided to the students in the Education Outreach Center.

Each student was provided with a writing journal, which would be used at each of the places we visited in the project. While at the zoo, the teacher read *DogKu* by Andrew Clements to the group. The book tells the story of a dog using a Haiku format on each page of the book. The students used the book as a mentor text to model Haiku writing of their own (Figure 3.) about the animals in the zoo. In addition, they wrote stories from the zoo animals’ points of view in the format of a letter addressed to the zoo visitors. The students were encouraged to walk through the zoo one last time to get ideas before writing in their journals.

Into the woods

The next week the group traveled into the woods, led by a university biology professor and his team of biology graduate students. The following is an outline of the events in this location:

Experts	Teaching Objectives	Activities
biology professor & graduate student research team	<ul style="list-style-type: none"> • To understand how scientists collect data. • To demonstrate graphing skills. • To determine a line of best fit. • To identify plants and animals located in the woods. • To identify the types of fish located in a state river. 	<ul style="list-style-type: none"> • Data collection • Data graphing and interpretation • Searching for plants, reptiles, amphibians, insects, and fish located in the woods
teachers	<ul style="list-style-type: none"> • To understand the effects of pollution on river systems. • To identify an owl pellet's contents and practice recording and analyzing the data. • To integrate math, literacy, and art into science lessons. • To capture the patterns in nature 	<ul style="list-style-type: none"> • Math: Data analysis and graphing. • Science: Dissecting owl pellets. • Art: Mount the animal bones found in the pellet and identify what owl may have eaten. • Art: Sun-sensitive nature records of patterns. • Writing: Nature story frames. • Journal writing prompt: How did the animal end up as the owl's dinner?

The biology experts taught the students about different plant and animal species as we hiked through the woods and along a state river. The teacher prepared for the day by meeting with the experts about the topics being covered in order to facilitate the activities related to the wood. She divided the students into groups to best meet the needs of the students and provided note-taking guides to support the data collection that would occur at this location. The expert scientists modeled for the students how they collect data to determine insect and plant diversity in a given

area. Each student team was then assigned to work with an expert scientist to carry out a scientist's job. The students were provided with equipment they would need to collect data in various areas throughout the woods.

After our trip into the woods, the students had an opportunity to work in an authentic university science lab. They also participated in a nature walk to observe the patterns in nature.

Interdisciplinary activities and learning in the woods. The students got to participate on a scientific research team to collect data like a scientist to determine the number of different plant and animal species in a certain location. Each team formed a hypothesis before the data collection began as to what they might find about the plants and insects in the area. Each team recorded the types and numbers of insects and plants they found in each collection area. The expert scientist on each team also took the time to identify the various insects, plants, reptiles, amphibians, and fish discovered along the hike and throughout the data collection. The students noted their observations and discoveries on the teacher prepared data collection note-taking guides. They were also encouraged to take photos using their technology devices. The teams then gathered to compare, analyze, and graph the data. Based on the data graphed from each team, a line of best fit was established to determine if there was a correlation between the number of insects and plants. The scientist then guided the teams as they discussed the implication of the relationship of the number of plants (food source) to the number of insects in each collection. The students were also excited to share the pictures of the "critters" that they located on the hike. The data helped the student scientists determine if their hypothesis was true or not. The students were performing the scientific process as well as incorporating math and writing within the graphing.

The following day was spent learning about the effects of pollution on the environment, including the web of life. Connections were made to the hike through the woods on the previous day. The students participated in a pollution simulation called “Who Polluted the River?” (<https://www.populationeducation.org>). Through an interactive story, students experienced the pollution of a local river over time and proposed methods to protect the river from current and future pollution.

For the next activity, the teacher began by modeling lab safety and the process of dissecting owl pellets. The students were then provided with the proper equipment in the lab and permitted to dissect his/her own owl pellet. After discovering the skeletal bones inside of the pellet, the students mounted the skeleton on colored paper while attempting to identify the type of animal eaten by the owl. The students then wrote a story in their journal to explain how the animal skeleton they discovered inside became the owl’s meal. Here is an example of a story:

The Day the Mouse Became a Meal

Huey was a small, very lonely mouse. He worked at an insurance company and lived with his wife and three children. It was a busy day like any other when he scurried up the street, saying a little hello to familiar people he saw. He rushed into his quiet space at work and quickly clocked in. “Right on time, Huey,” the secretary said without looking up. Huey nodded absent-mindedly and walked into his office.

Five hours later, Huey walked out of his office, bleary-eyed. He would have to return in a couple of hours, but he needed to get out of his office for a little while. What a better way than taking a walk? He strolled down the sidewalk. Suddenly, he bumped into something...a foot...an owl foot. Faster than he could scream, he was snapped up by the large beast. And that was the end of Huey!

Our last activity related to this location was a nature walk around a campus lake. Before leaving on the nature walk, the students were shown the YouTube video *Finding Arts in Unexpected Places* by Soul Pancake (<https://www.youtube.com/watch?v=kQyn4cAkIIY>). Each

child was provided a picture frame and asked to capture a snapshot of art in nature or a picture related to nature conservation, ecology, or protecting the environment from pollution to preserve the beauty. The students added at least one photo that they took with a caption to explain the message in their journals.

As the students walked, they were encouraged to look for patterns in nature.

Photosensitive paper was used to capture patterns found in nature. Various items that the students collected were laid on the photosensitive paper in the sunshine to create a print of the pattern. The photosensitive paper is coated with light-sensitive chemicals which react to light waves and particles when exposed to sunlight. When objects are placed on the paper, they block the light and turn white while the paper around them remains blue. The paper is then rinsed with water, which stops the process and fixes the images on the paper. The students compared pictures and discussed the patterns with each other.

Oh the things you can do that are good for you

Our next week was busy and consisted of a variety of experts from our student health and wellness and recreation center on the university campus. The following is an overview of the events at this location:

Experts	Teaching Objectives	Activities
health promotion major	<ul style="list-style-type: none"> • To identify cross-training workout • To understand the benefits of daily exercise • To define VO2 max (measure of the maximum volume of oxygen that an athlete can use) 	<ul style="list-style-type: none"> • Create a cross-fit video using Videolicious® • Measure VO2 levels • Compared student pulses and blood oxygen levels to athletes
student athletes	<ul style="list-style-type: none"> • To explain the healthy lifestyles of athletes 	<ul style="list-style-type: none"> • Student interviews/bio-poems • Created student athlete posters • Recorded athlete pulses

team of registered nurses	<ul style="list-style-type: none"> • To determine blood oxygen levels • To demonstrate how to take your pulse • To identify the top 10 health factors for teenagers 	<ul style="list-style-type: none"> • Students recorded pulse and blood oxygen levels • Participated in health risk discussion groups
yoga instructor	<ul style="list-style-type: none"> • To learn stress relaxation methods 	<ul style="list-style-type: none"> • Participated in yoga • Discussed body angles for poses
teachers	<ul style="list-style-type: none"> • To compare and contrast nutritional labels and levels of sugar in snacks commonly consumed by teenagers. • To explain health lifestyle choices • To integrate math, literacy, and art into health lessons. 	<ul style="list-style-type: none"> • Math: Data analysis and graphing; discussion of angles in yoga poses • Science: Pulse-rates; VO₂; blood oxygen levels; nutrition labels • Art: Student athlete posters • Writing: Blogging on KidBlog • Technology: Cross-fit Videos

All our experts led our students in better understanding of healthy lifestyles. They learned how to record data related to fitness activities. They had opportunities to use tools to calculate the impact of fitness activity on their bodies, learn health issues most related to their age group, gain understanding of how to reduce stress, and interact with athletes. At this location we were able to integrate technology into the lessons as well.

Interdisciplinary activities and learning about health and fitness. Our first expert was a health promotion college student who came and talked about different kinds of exercise and demonstrated them with the campers. She explained the benefits of exercise and how to create a cross-fit training routine to keep fit. She also explained VO₂ max as a measure of the maximum volume of oxygen that an athlete can use. She provided a math formula that athletes use to determine their VO₂ max, which maximizes their aerobic workout. Following the activity, the students worked in teams to create a cross-fit video routine using the *Videolicious* app on the ipads. The videos shared by each group lead the other students in the workout. Access to the

links was provided to the students so they could use the cross-training videos outside of the camp.

Next the students met with a team of registered nurses. They were allowed to take their blood oxygen levels using a pulse oximeter. The students recorded the number in their journals. They were also instructed on how to take and record their pulse (see picture above). The nurses



then provided the students with an article on the ten health factors that influence a teen's health. The students were provided chart paper and worked in groups to identify the factors. The nurses then led a discussion with the students regarding the factor and healthy lifestyle choices. They were given a chance to discuss each health situation teens face and then used *Kid Blog* to share their thoughts.

The students were especially excited to be paired with a university athlete to conduct an interview about their sport, health, and training practices. In order to help guide the interviews, the teacher provided the students with a list of questions to ask their partner athlete. A picture of the student and athlete was also taken. The students stated this was one of their favorite

activities, although some were a little reluctant at first. Based on the information they gathered in the interview, the students then wrote bio-poems about the athletes. They also took the athlete's pulse as well as their own pulse. The pulses were graphed and a discussion about how the student pulse compared to the athletes was related back to what they had learned from the nurse and health promotion major about VO₂ max, blood oxygen, and pulse rates. Each student then constructed a display board, which consisted of the bio-poem, pictures, and images to represent the athlete. These were then displayed in the athletic department at the college.

Following these activities, the teacher led the students in an activity that compared sugar levels in drinks and snacks that are commonly consumed by teens. Each student was given a snack/drink and asked to read the label. Based on their own thinking, they were asked to line up from least healthy to best choice for a snack/drink. The students were asked to explain why they had made the decision to stand where they had on the continuum. A discussion followed about healthy food choices in relation to value of the calories compared to the amounts of sugar, protein, and fat.

A yoga instructor came and talked about stress reduction and relaxation with the students. She led 30 minutes of yoga exercises with them. After the completion of the activity, the students were noticeably more calm and more relaxed. The teachers were surprised to find the students enjoyed participating in the yoga exercises. The angles of the various body positions used in yoga were also discussed.

From Here To There To Everywhere

Our last week was a compilation of different locations and experts. This is an overview of our time:

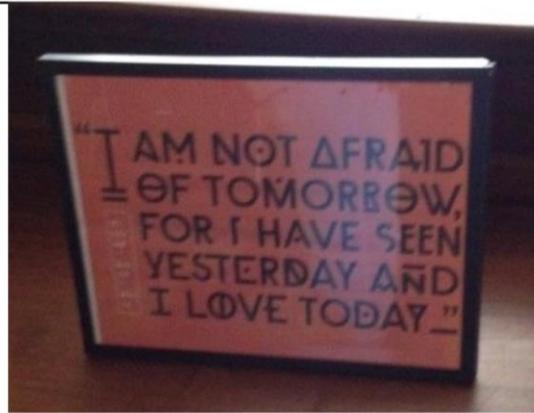
Experts	Teaching Objectives	Activities
participants from the Flint Hills Writing Project	<ul style="list-style-type: none"> To mentor a student writer 	<ul style="list-style-type: none"> Tour notes from WAW House Newspaper article
Kansas Historical Society	<ul style="list-style-type: none"> To explain the history of the life and times of William Allen White and his family 	<ul style="list-style-type: none"> Historical accounts of William Allen White site
participants from PBE camp	<ul style="list-style-type: none"> To teach the community about what they had learned 	<ul style="list-style-type: none"> Presentations of learning from various locations
project teachers	<ul style="list-style-type: none"> To compile and reflect on learning experiences throughout the project 	<ul style="list-style-type: none"> Conduct student interviews Create presentation boards

Our goal at our last location was to allow the students to see themselves as writers and experts of their learning in the project. In order to accomplish this, students were paired with adults that allowed the student to be the expert and teach the adults about what they had learned.

Interdisciplinary activities and learning at the end of the journey. We started our last journey by pairing our students with teacher experts from the Flint Hills Writing Project as they toured the home of William Allen White. Before the tour given by the Kansas Historical Society, the students were provided with guided notes to direct them to important information they would learn on the tour. They were instructed to investigate the house and life of the White family like a newspaper reporter. They were told to find something of particular interest to them inside the house, ask questions, and take pictures. At the end of the tour, they worked with their teacher partner to write a story like a journalist to report about something they learned as they toured in the house. The teachers were able to give one-on-one support and were supportive in the final pieces of writing that were published in a newspaper format. This is an example of one of the articles:

Words to Remember
by Sasha and Carlene

In the livingroom of the William Allen White house, you might find one of William's favorite quotes "I am not afraid to tomorrow for I have seen yesterday and I love today." This could remind William to go on and be happy with life because he survived some hard times, like his daughter dying while he was out of town. Even though that happened, he went on with life. He kept writing and he was happy.



On the last day of our project, the students acted as “tour guides” and the experts in a “travel show” that they produced. Parents, friends, and community members were invited to come and take a tour of the travel adventures at our showcase of student work from each place and listen to our expert travelers.

Schoolwork is more meaningful when it’s not done only for the teacher or the test. When kids present their work to a real audience, they care more about its quality. Once again, it’s “the more, the better” when it comes to the authenticity. Students might replicate the kinds of tasks done by professionals—but even better, they might create real products that people outside school use. (Larmer & Mergendoller, 2010, pg. 55)

To prepare for the “travel show,” the students were divided into groups based on experiences throughout the camp. Each group prepared a display board with pictures and quotations from one of the places where they had visited and taught the information which they had learned from the experts. All the artifacts that had been collected or created from each place, along with the student-created display boards, were arranged in one of the university atriums.

Maps were created to guide individuals through the exhibits and showcase the learning adventure. The students acted as tour guides and led parents and visitors from the community through exhibits from place to place to share what they had learned during the camp and answer any questions. Approximately 50 people from the campus and community came to the travel show to learn from the student experts. The students were especially excited that some of our experts from the various places attended the travel show to learn from them.

Results, Conclusions and Implications for the Classroom

Throughout the camp, many observations were anecdotally noted regarding behaviors, impact on student learning, changes in student motivation, and attitude and the facilitation of the project. When reviewing the exit slips collected each day, we found that the students could recall a lot of the information each day. This was evident at the travel show when they acted as tour guides and relied on their own learning to become the experts in teaching and answering questions for our visitors. We found that they liked working with the different experts and attributed this to being engaged and motivated to learn. One of their favorite activities was touring the historical site with the teachers. This was surprising since most of the students had reported that they had toured the site before on their own. The students reported that the note-taking guide led them more carefully through the house, but especially appreciated the extra help from the teacher-expert who served as the mentor. They also reported that meeting the student athletes, learning yoga, and dissecting in a real science lab were some of their other favorite experiences.

Some of the things we learned that the students did not like were walking to the various locations and encountering the mosquitoes in the woods. Since it was summertime, these two factors may have interfered with their learning when comfort was an issue. Some reported that

having to write each day on the exit slips was not a favorite activity, either. One surprise we had was the students reported that some places had too many experts and the information was overwhelming at times. One student stated that having too many community experts in one week led to confusion for her. The teacher and the university mentor reflected on ways to strategically use experts in the future to maximize learning, motivation, and engagement without crossing the line to exhaustion.

Themes that we found in the pre/post attitude surveys and student interviews revealed that they didn't like having to sit in a chair all day without moving much in the regular classroom. Jensen (2005) states that the human body was created to walk, run, and skip, but not sit in chairs. By using place-based education the kids don't have to sit in the classroom and at a desk all day. They are given a wide variety of settings in which to learn from a variety of experts, instead of confined within the walls of a classroom. Another important advantage noted was the opportunity to learn from different people on the various topics instead of only reading from a textbook or listening to a teacher lecture. The students felt they benefited when they were permitted to perform the role of the expert alongside of the expert. According to the George Lucas Educational Foundation (2015), inviting community members into the classroom to share their expertise can help bring lessons and learning to life for students.

Behavior was also something that we recorded each day. The students were always on task and listening to every speaker that we had. We attributed this to the fact that we were in a different location and were learning about something from a different perspective, which made the topics more interesting and active. We found that the active learning from the experts reduced the number of behavior issues that we experienced from the students.

Often, teachers might be hesitant to incorporate kinesthetic activities in their classroom for fear that the class may become out of control. According to Palmer (2003), significant gains in attention and reading can be obtained from the use of stimulating activities. While our students did get excited during some of the activities, we learned that we could easily deescalate the behavior by simply balancing with a more calming activity, such as yoga. Peck, Kehle, Bray, and Theodore (2005) state that yoga offers a potential means to address a wide range of challenges in the classroom. This may explain why we were able to manage kinesthetic activities such as the fitness activities, if followed by a calming activity such as yoga.

The activity the students reported to have liked the least was the nurses who came in and talked about the top ten health factors facing kids. These were the only speakers that came in and primarily used a lecture/discussion format. Therefore, we learned that we needed to choose our experts carefully and communicate clearly the role that they will play in the lesson. It is important to clearly relay your expectations to the experts when they are first invited.

While it may seem to some that PBE just allows teachers to let other people teach for them while they sit back, this is just not the case. In fact, it might be more work for the teacher to plan ahead, coordinate, and prepare for expert guest speakers in order to get the most out of the activity. While experts in the field know the topic at hand, they rely on the expertise of the classroom teacher to use their knowledge of pedagogy to integrate the strategies, such as guided notes, to better support and process the conceptual learning. Taking everything into consideration, we believe that the benefits of PBE far outweigh the disadvantages which could be better avoided with more careful planning of our PBE experiences in the future.

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Figure 1. Pre/Post Surveys

Circle one: male or female

Age: _____

1. My favorite thing about school is:

2. My least favorite thing about school is:

3. If I could change one thing about school, I would change:

4. I wish my teacher knew:

Figure 2. Exit Slip

PUT ME IN THE ZOO – DAY 1

Circle: male or female

Age: _____

Three things I learned today:

1. _____

2. _____

3. _____

 <p>www.pxfuel.com</p>	<p>One thing I LOVED about today:</p>
 <p>www.pxfuel.com</p>	<p>One thing I did not like about today:</p>

Figure 3. Animal Haikus

<p>Flint is the best cat He eats raw meats and fish He is an the very best <i>By Annabelle</i></p>	<p>Prairie dogs so small Prairie dogs dig through the dirt Prairie dogs so cute <i>By Ary</i></p>	<p>I like big tigers Sometimes they are dangerous That's why I like them. <i>By Eric</i></p>
<p>Peacocks are cool I like colorful peacocks Peacocks are pretty <i>By Cindy H.</i></p>		<p>Llamas are simple It eats a lot of good food too Llamas are like us <i>By Ian</i></p>
<p>Lives in the desert Spits on anyone it sees It looks like a boss <i>By Ethan</i></p>	<p>Mountain lions eat It eats humans to have fun It has a good life <i>By Kit</i></p>	<p>I am a llama The man eats like a llama Llamas spit in food <i>By Issac</i></p>
<p>Lives with the fishies Turtles can be really cool They are really hard. <i>By Ethan</i></p>	<p>Dogs chase cats for fun Bears eat Bears like to eat meat <i>By Collin</i></p>	<p>Mountain lions like llamas. They are very fierce to you. They are fierce killers. <i>By Nelson</i></p>