

White Paper

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The GeoHistorian Project

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Narrative

The GeoHistorian Project is an initiative from Kent State University's Research Center for Educational Technology (RCET). The project curriculum connects schools with local historical societies and historical sites, and educates middle and high school students to become local historians who create digital stories that can be accessed on location by way of mobile phones and QR codes (2-dimensional barcodes). The project began in September 2010 and was completed in May 2012 with the installation of the last few QR code markers. This final report documents completed project activities and accomplishments.

Project Activities

Activities related to the GeoHistorian Project can be roughly divided into five phases (keeping in mind that dissemination of project information and outcomes took place throughout (see **Grant Products** section):

1. Background Research and Curriculum Development (September 2010-April 2011)

During fall and winter 2010, project staff conducted the necessary background research and created the preliminary version of the GeoHistorian curriculum, which consisted of a four-week unit including lesson plans, supporting materials, and a password-protected wiki space. Undergraduate students from Kent State University's Honors College assisted in finding and evaluating appropriate resources for digital storytelling and local history. In addition, a project website was created at <http://www.rcet.org/geohistorian> by project director Mark van 't Hooft. Both project directors also collaborated with the Kent Historical Society (KHS) to identify suitable sites for student research and digital story creation. The criteria for including a site consisted of the following:

- Each site had to hold some potential interest with students;
- Enough historical materials were available, especially images;
- (Most) sites should be within walking distance of each other so that on-site research could be conducted by all students during a single-day fieldtrip;
- A QR code marker could be installed on site.

Using these criteria, RCET and KHS staff created an initial list of approximately 30 sites in Kent. From this list, 11 sites were chosen for the first implementation round. One site (former Erie Railroad shops) was used to create sample materials for teachers and students, including a wiki resource page, storyboard, and digital story. These materials were used throughout the project to illustrate the process of historical research, storyboarding, and digital story creation. The other 10 sites were used during the first round of curriculum implementation. KHS staff searched its archives for suitable materials and digitized them as necessary. Using Dropbox (<http://www.dropbox.com>), items were shared with RCET staff for inclusion in the password-protected project wiki, which was built to provide teachers and students with a repository of digital images and work space during curriculum implementation. Towards the end of Phase 1, the necessary technology was purchased to support teachers and students, including a scanner, digital cameras and tripods, headsets with microphones, and a few USB drives. In addition,

teachers worked with district technology personnel to ensure that they would have access to enough computers with Microsoft Office and PhotoStory, as well as drive space to save student project files that would not be housed on the project wiki.

2. First Round of Curriculum Implementation (April-May 2011)

Two 5th grade teachers were recruited in fall 2010 to implement the curriculum in spring 2011. Over a period of several months, (December 2010-April 2011), they worked with RCET and KHS staff to tweak the curriculum and supplementary materials to suit their and their students' needs. After the necessary revisions were made by RCET staff, the two teachers team-taught the curriculum to 34 students in late April and May 2011; this was later than anticipated but implementation had to be scheduled at that time of the year so as to not interfere with state proficiency testing. Advantages were that teachers were a little more flexible in their use of instructional time, and the weather was nice for the fieldtrip during the second week of the unit. The disadvantage was that there was not much extra time at the end of the school year in case the unit were to last longer than four weeks, which it did. Due to end-of-year activities, it took teachers five weeks and three days to complete the unit, and as a result, RCET staff had to assist in finalizing the videos and uploading them to YouTube, and creating the QR codes.

3. QR Code Installation and Curriculum Revisions (May-August 2011)

Towards the end of the first curriculum implementation, KHS staff contacted the appropriate parties at the various historical sites to get approval for installation of the QR code markers. This took somewhat longer than expected, as in several cases permission had to be granted by either a governing board (Kent Free Library, Marvin Kent House), or corporate management (Huntington National Bank). In the meantime, RCET staff worked with a local trophy shop and the City of Kent Maintenance Department to have the first set of 11 QR code markers made.

Two markers were installed on June 18, 2011, to coincide with the reopening of the Kent Historical Society in a new location, the historic Clapp-Woodward House. Both teachers and several students were on hand to help install the first QR code marker there, while the second one was installed at the former Erie Railroad Depot. By the end of September, the remaining nine markers had been installed. Three of them were mounted on posts by the City of Kent (Kent Hotel, Cuyahoga River Dam, and Main Street Arch Bridge), the other six were installed by RCET and KHS staff (Silk Mill, Kent Free Library, Star of the West Mill, Kent National Bank, Marvin Kent House, and Former Erie Shops). One marker (Williams Brothers Mill) was stolen within weeks of installation, and a replacement was mounted in a more secure location at the site.

During Phase 3, the project directors also made revisions to the curriculum based on teacher feedback and actively recruited new teachers for a second round of curriculum implementation in fall 2011. After exploring possibilities at the local middle school (too many students per teacher/team) and high school (no time to fit GeoHistorian in the regular social studies curriculum and not enough students to revamp the activities as an extracurricular activity), three 5th grade teachers from a second elementary school in Kent agreed to participate. The teachers were provided with copies of the curriculum and support materials, the necessary technology was

ordered, and district technology support installed PhotoStory on classroom and lab computers. In addition, RCET and KHS staff met several times with the teachers to help them prepare for the upcoming implementation. A list of 18 historical sites was compiled from the expanded master list, which now comprised of roughly 40 sites. While KHS staff pulled resources from their archives, RCET staff secured permission to use supplementary resources from the Kent State University Library Special Collections and Archives. In addition, several members from the Kent community came forward with pictures, newspaper clippings, and stories from their personal collections, when informed that their sites had been chosen to be a part of the GeoHistorian Project.

4. Second Round of Curriculum Implementation (September-December 2011)

Following the preparation in the summer and early fall 2011, the second round of implementation commenced in mid-October 2011 with the three teachers and 63 students. The entire unit was taught in four weeks, with the omission of a few activities due to time constraints. However, because several student groups experienced technical issues during their audio recording sessions, RCET project staff worked with them after the unit had been finished to re-record individual sections and, in a few cases, entire digital stories. By early December, all digital stories had been recorded, finalized, and uploaded to YouTube, followed by the creation of the QR codes and markers.

5. QR Code Installation and Final Curriculum Revisions (January-May 2012)

Installation of the second set of QR code markers took place between January and May 2012. Markers were installed by project staff, the Kent Parks and Recreation Department (Kent Jail and Kent Mill), and the owners of three of the sites (Kent Block, Opera House, and Kline's Grocery). A special dedication was held at Davey Elementary School on May 10, 2012, as participating students, teachers and staff, parents, the Kent City Schools superintendent and assistant superintendent, KHS staff, and several visitors viewed the 18 videos that were created during the second round of curriculum implementation. This was followed by the installation of the QR code markers for Davey Elementary School and the John Davey House to celebrate the completion of the GeoHistorian Project.

During this phase, the curriculum was further refined based on teacher feedback. In its current state, the completed curriculum consists of four weeks of lesson plans, associated materials, and a demo wiki with materials from the first implementation round that can be found at <http://geohistoriandemo.wikispaces.com>. Even though the curriculum is self-explanatory, additional documents were developed to aid teachers in preparing for and implementing the project, including a one-page curriculum overview chart, a "before you start" document, and a list of national standards covered in the GeoHistorian curriculum (including those of the National Council for the Social Studies, National Council for Teachers of English/International Reading Association, International Society for Technology in Education, and Common Core). The complete curriculum and its support materials were uploaded to the project website at <http://www.rcet.org/geohistorian/curriculum/> on March 1, 2012. They are licensed under a Creative Commons Attribution, Non-Commercial, Share-Alike, 3.0, Unported License, and freely available to anyone interested in the project or in replicating it elsewhere.

Finally, in an effort to provide more exposure for the GeoHistorian Project to the general public, project director Mark van 't Hooft developed a two-part brochure that explains the project, what QR codes are and how to use them, and where the 29 QR code markers are located. In addition, the first brochure contains a scavenger hunt of sorts to encourage users to find and scan ten of the QR code markers and access the digital stories associated with their respective historical sites. Upon completion of the challenge, participants can receive a free copy of KHS's coloring book. Finally, a QR code is provided on the back of each brochure that can be scanned to access a brief feedback survey. As of May 31, 2012, about 2,000 of the 2,500 printed copies of Parts 1 and 2 of the brochure had been distributed.

Changes Made

The GeoHistorian Project stuck relatively closely to its work plan as laid out in the original proposal. Nevertheless, some adjustments had to be made during implementation:

- While the original plan was to work with middle and high school students, this proved to be unfeasible. Instead, we collaborated with fifth-grade teachers at two local elementary schools.
- The length of the spring 2011 implementation increased from four weeks to five weeks and three days due to a variety of end-of-year events. That said, four weeks should be enough time to teach the curriculum, as demonstrated during the second implementation (not considering the technical issues). However, a short break following the third week may be necessary to build in more time for storyboard review (see the **Lessons Learned** section below). Obviously the time needed for review depends on the number and length of storyboards created.
- The project did not yield the expected volume of training materials. Due to the fact that project staff worked very closely with the two groups of teachers who implemented the curriculum, and the self-explanatory nature of the lesson plans and materials, there was no need to create them. Even so, following the second implementation a few supporting documents were drafted, including a one-page curriculum overview chart, a “before you start” document, and a list of national standards covered. They are downloadable as part of, as well as separately from, the GeoHistorian curriculum.
- RCET staff administered a short pre/post-test to participating students to measure knowledge gains in local history, being a historian, and digital storytelling.
- Installation of the first 11 QR code markers took much longer than anticipated, with the markers being installed over a period of about three months. The initial expectation was that installation would be completed in June instead of September 2011. Installation of the second round of markers lasted from January through May 2012, due to weather and scheduling issues, as some venues were closed for the winter and the dedication of the Davey Elementary School and Davey House markers could not be fit into the Davey Elementary School schedule until May 2012, following state proficiency testing.
- The second round of implementation was kept within the City of Kent, due to its success in the first round, but also to be able to tweak the curriculum further and provide a better end product. Working with a different school district and historical society could, and probably would, have moved the project back to square one.

- Towards the end of the project, the idea arose to create a two-part brochure to help advertise the project to the general public. A total of 2,500 copies of each brochure were printed, and about 80% had been distributed as of May 31, 2012.

Accomplishments

While the overall focus of the GeoHistorian Project was to teach K-12 students the importance of preserving and sharing our history, five specific objectives were developed. They are listed below, each being followed by an explanation of how and to what extent it was reached:

- Development of a *GeoHistorian* curriculum for teaching students how to become historians and use digital technologies to share what they've learned. *RCET staff, in collaboration with participating teachers, developed and published a four-week unit, focusing on local history, historical research, and digital storytelling. The unit and related materials are available at <http://www.rcet.org/geohistorian/curriculum/>*
- Development of training materials that will help teachers and staff developers to successfully implement the aforementioned curriculum. *As described previously, development of extensive training materials proved to be unnecessary. That said, some support materials were created for teachers who are interested in replicating the project elsewhere. More extensive training materials will be developed within the next two years, once additional funding has been secured.*
- Creation of a *GeoHistorian* website that houses project information, the curriculum and training materials, as well as student-created digital content that can be accessed with wireless mobile devices. *Project director Mark van 't Hooft designed, built, and maintained a project website at <http://www.rcet.org/geohistorian>. The site provides project information; chronicles project activities in regular blog posts; acts as a repository for the curriculum, support materials, and links to publications and presentations; and links to related project materials, including a demonstration wiki (<http://geohistoriandemo.wikispaces.com>) and student-created digital stories (<http://www.youtube.com/user/geohistorian>)*
- Installation of QR codes at historical locations in participating local communities. *A total of 29 QR code markers were installed in historical locations throughout the City of Kent.*
- Fostering of stronger relationships between schools and their local communities. *Many different entities worked with RCET and the Kent City Schools to make this project the success that it became. They include the Kent Historical Society, City of Kent, the Kent Parks and Recreation Department, and owners of various historical sites (see e.g. <http://www.rcet.org/geohistorian/2011/10/27/geohistorian-project-becomes-a-community-effort/>).*

Audiences

Audiences for the curriculum included five 5th grade teachers at two elementary schools in the Kent City Schools (out of a total of five elementary schools in the district). Four teachers were female, one was male. All were white, not Hispanic, and ranged in age from 24 to 55. They had 42 years of teaching experience between them, with a range from 1 and 14 years. The five teachers taught a total of 97 students, including 58 males and 39 females. Of these students, 67 were white, not Hispanic, 17 were African American, and 13 were classified as being multi-racial.

Approximately 57 % of students were eligible for the free/reduced lunch program, and 15 students received special needs services.

The audience for the QR code markers and digital stories is the general public. While it is too early to provide detailed demographic information about those accessing the digital stories by scanning the QR codes, those most likely to do so include the nearly 28,000 citizens of Kent as well as 23,000 students and 3,000 employees at Kent State University, 152,000 people of Portage County, as well as all individuals, families of Kent State students, and tourists who are drawn to the City of Kent.

Lessons Learned

An official evaluation of the project was not conducted, but it was informally assessed based on project staff experiences and observations and feedback from various stakeholders, including teachers, students, historical society staff, and community members. Based on this information, the following list of project strengths and weaknesses was compiled:

Strengths:

- The curriculum and its support materials formed one of the focal points of the project, and it was clear from the outset that they would have to be excellent. As such, more time than originally planned was spent on the unit and material design, but this proved to be worth it in the end. Teachers liked the curriculum, especially its inclusion of skills and content across several disciplines, and appreciated the wealth of support materials provided. Students enjoyed learning about local history (especially during a fieldtrip to the historical sites they researched) and creating the digital stories. They also learned that being a historian is hard work!
- Through the use of digital tools and the hard work of many participants, the general public can now learn about many stories in Kent's history at the locations in which they happened. Even though all 29 stories are freely available on YouTube, project staff experiences and those of others have illustrated that accessing a digital story on location is a much more powerful experience than watching it on a desktop or laptop.
- The project website has become a repository for all materials related to the GeoHistorian Project. It has received about 2,000 visits since its launch in October 2010.
- The project brochure has been instrumental in advertising the GeoHistorian Project and QR code markers to the general public.
- As time went on, the project increasingly became a collaborative *community* effort. As such, it has been successful in fostering relationships between Kent State University, the Kent Historical Society, teachers and students from the Kent City Schools, and the local community. Owners of many of the participating sites were more than willing to share resources that would have been inaccessible otherwise, and were excited to have a QR code marker installed.

Weaknesses:

- The original plan was to implement the curriculum with middle or high school students, due to the level of thinking and work expected. This turned out to be impossible; instead, two groups of 5th grade students and their teachers participated. The first group of students experienced the curriculum at the end of 5th grade and the second group about

midway through the first half of the year. Implementing the GeoHistorian curriculum with 5th graders was challenging, and this possibly explains why teachers could not complete the curriculum as written in four weeks.

- Related to the above, the unit may have contained too much content to be covered within the allotted four weeks. To address this issue, RCET staff revised the curriculum with input from the teachers, so that certain activities could be left due to time constraints, without compromising overall curricular goals and objectives.
- There was a relative lack of preparatory information for teachers. Instead, RCET and KHS staff worked with teachers prior to unit implementation to make sure all the pieces were in place for successful project completion. Following the second implementation, a two-page “before you start” document was created to assist teachers and historical society staff who want to replicate our project elsewhere. In addition, information is included at the end of the Week 4, Day 5 lesson plan that describes the creation and installation of the QR code markers.
- A small break should have been built in after Week 3 to allow ample time for storyboard review before students created the digital stories. As is, historical society staff had one weekend to complete the reviews, and this proved to be a challenge with 18 storyboards to be checked for historical accuracy during the second implementation. Project director Mark van ‘t Hooft assisted KHS staff to complete these reviews on time.

Public response, including media coverage, has been very positive, although it is too soon to tell what the real impact of the project will be beyond the participating students and teachers. Both the Kent City Schools and KHS have been very satisfied with the outcomes. Many community members we have talked to like the project and think it is an asset to the city. For example, city workers told us they were scanning the codes as they were assembling the QR marker posts in their workshop; an administrative assistant at the school district’s board office told us she was going to complete the challenge in the first brochure with her grandchildren; and the school superintendent has asked project staff to do a presentation at a Rotary Club meeting at the beginning of the 2012-2013 school year.

Some preliminary data have been collected to determine digital story access by the general public (for the markers that have been installed). Because QR code markers have been installed at different times, numbers of hits per month were calculated, which range from about 2 to 10 by way of QR code, and between 7 and 30 for YouTube-only access. No real patterns can be discerned in the data yet, other than that QR code markers that were installed earlier tend to have a higher access rate per month.

Long Term Impact

From the very beginning, the ultimate goal of the GeoHistorian Project has been that its curriculum will provide a model for teaching (the value of) local history using digital tools and can be easily replicated across the United States. At the conclusion of the project, participants have confidence that this can happen, and there is some indication that it will. For one, two of the participating teachers have transferred the concept of the GeoHistorian Project to other learning activities for their students. Second, project director Mark van ‘t Hooft was contacted by the Mystic River Historical Society in Connecticut with regards to replicating the project there.

However, in order for more widespread adoption, potential participants need to be aware of the project and its curriculum. Hence, project staff will continue to promote the project and its outcomes through the Internet (the *GeoHistorian* website, podcasts, and social media), conference presentations and workshops at local, regional, and national conferences for educators, and articles in practitioner-oriented journals.

In addition, KHS will continue to encourage the use of the QR codes and digital content to learn about local history. One way in which this is already happening is through the challenge that is included in Part 1 of the GeoHistorian brochure, as described earlier in this report. Second, KHS is currently investigating how it can incorporate the existing QR code markers in some of its current and future programming. Third, it is also exploring ways in which additional digital stories and associated QR code markers could be created for the City of Kent.

Finally, there are plans to secure additional funding to expand the GeoHistorian project in scope, in order to implement it in other school districts and communities in Northeast Ohio and beyond. One NEH grant proposal is currently under review, which, if funded, would accommodate the development of a full set of professional development materials; implementation of the GeoHistorian curriculum and these professional development materials in five school districts with the participation of four historical societies; and the free distribution of both curriculum and professional development materials online for schools and historical societies for implementation across the United States.

Grant Products

Between September 2010 and March 2012, the GeoHistorian Project yielded the following products:

- A **four-week curriculum** including lesson plans, materials, and a wiki site. The curriculum can be downloaded for free at <http://www.rcet.org/geohistorian/curriculum/>. A demo version of the wiki site is available at <http://geohistoriandemo.wikispaces.com>.
- **Twenty nine digital stories** posted on YouTube at <http://www.youtube.com/user/geohistorian>. One story was created by RCET staff as a sample, the other 28 by fifth-grade students). For the initial 11 videos, two versions of each were created for posting on YouTube: a public version (searchable and freely accessible), and a private version (only accessible by way of the QR code). This was done to keep track of how many times the videos are being accessed via the QR codes, yet at the same time make the videos available to a broader audience. An alternative method was followed for the second round of implementation, using <http://snap.vu> to keep track of QR code use without having to create two versions of each video.
- **Twenty nine QR code markers**, installed at historical locations in downtown Kent. For the actual locations, please visit <http://www.rcet.org/geohistorian/local-history-kent-oh/>. As of the completion of this report, 26 of 29 markers have been installed.
- A **project website**, located at <http://www.rcet.org/geohistorian>.
- **Eight publications**, including a two-part brochure (2,500 copies printed) to educate the general public about the project:

- van 't Hooft, M. (2012, May). [GeoHistorian Project update](#). *ISTE SIGML Newsletter*, 7(2), 2. (Published by the International Society for Technology in Education's Special Interest Group on Mobile Learning).
- Crompton, H., LaFrance, J., & van 't Hooft, M. (2012). QR Codes 101. *Learning & Leading with Technology*, 39(8), 22-25.
- van 't Hooft, M. (2012). *Learn about Kent's history using QR codes and your mobile phone!* (two-part brochure). Kent, OH: Kent State University, Research Center for Educational Technology.
[Part 1](#) (pdf, 7.1 MB)
[Part 2](#) (pdf, 9.6 MB)
- van 't Hooft, M. (2012, Spring). [Teaching students to become digital local historians: The GeoHistorian project](#). *AERA Social Studies SIGnal*, 4-5 (published by the American Educational Research Association's [Special Interest Group for Research in Social Studies Education](#)).
- van 't Hooft, M. (2011, Winter). [The GeoHistorian Project: Learn about Kent's history with your cell phone](#). *Tree City Bulletin*, 16(4), 22.
- van 't Hooft, M. (2011, Spring). [Kent fifth-graders become local historians](#). *The Kent Historian*, 72, 4-5..
- Kent Historical Society (2011, Spring). *A walk through Kent: Interactive coloring book*. Design and illustrations by Jim Gundlach; includes GeoHistorian QR codes. Kent, OH: Author.
- van 't Hooft, M., & McNeal, T. (October 2010). [The GeoHistorian Project](#). *ISTE SIGML Newsletter*, 5(7), 3 (Published by the International Society for Technology in Education's Special Interest Group on Mobile Learning).
- **Nine conference presentations:**
 - Cummings, J, Goff, C., & Mostov, S. (March 2012). *The GeoHistorian Project*. Presentation at the [2012 Neotech Conference](#), Akron, OH ([Presentation slides](#)).
 - McNeal, T., van 't Hooft, M., Cummings, J., Goff, C., & Mostov, S. (February 2012). *Teach your students to become digital local historians: The GeoHistorian Project*. Demonstration table at the [2012 eTech Ohio Conference](#), Columbus, OH ([Poster materials](#) and [sample markers](#)).
 - van 't Hooft, M. & McNeal, T. (December 2011). *Students as local, digital history creators: The GeoHistorian Project*. Presentation at the [91st NCSS Annual Conference](#), Washington, DC ([Presentation slides](#)).
 - Cummings, J, Goff, C., & Mostov, S. (October 2011). *The GeoHistorian Project*. Presentation at the Kent City Schools Board Meeting, Kent, OH ([Presentation slides](#)).
 - van 't Hooft, M., & McNeal, T. (June 2011). *Students as local, digital history creators: The GeoHistorian Project*. Poster presentation at the [ISTE 2011 Conference](#), Philadelphia, PA ([Poster materials](#); [sample markers](#)).
 - van 't Hooft, M., McNeal, T., Crompton, H., & Greenhut, S. (June 2011). *SIGML walking tour: Learning history on location: Benjamin Franklin on your mobile phone*. SIGML Forum activity at the [2011 ISTE Conference](#), Philadelphia, PA ([handout](#)).

- van 't Hooft, M., & McNeal, T. (April 2011). *Making history local, digital, and relevant: The GeoHistorian Project*. Presentation at the [2011 Mobile Learning Experience](#), Phoenix, AZ ([PowerPoint presentation](#)).
- van 't Hooft, M. (April 2011). *Mobile scavenger hunt*. Outdoor mobile learning event at the [2011 Mobile Learning Experience](#), Phoenix, AZ ([handout](#)).
- McNeal, T., & van 't Hooft, M. (January 2011). *Using QR codes in the classroom: A brave new world*. Presentation at the [2011 eTech Ohio Conference](#). Columbus, OH ([Presentation slides](#)).
- **Media coverage:**
 - Rainone, H. (2012, May 22). [Two GeoHistorian markers have been installed by fifth graders](#). *Record Courier*, A3.
 - Harvey, I. (2012, Spring). [Young GeoHistorians discover Kent history](#). *Kent State Magazine*, 11(1), 12-13.
 - Fredmonsky, M. (2012, January 5). [Update: GeoHistorian project adds videos on Kent landmarks](#). *Kent Patch*.
 - e-Inside (2011, August 29). [Kent State partners with elementary students and historical society on GeoHistorian project](#). *e-Inside*.
 - Tomlinson, M. (2011, July 28). [Fifth graders create walking tour of Kent](#). *ASNE 2011*, Reynolds High School Journalism Institute at Kent State.
 - Edwards, N. (2011, June 27). [QR codes provide link to Kent's past](#). *Kent Patch*
 - McDonald, K. (2011, June 2). [Kent students make history come alive](#). *Record Courier*, 1, 2.
 - Norris, T. (2010, July 19). [Cell phone geohistorians assist students in cataloguing historic sites](#). *e-Inside*.

Future grant products are expected to include at least two publications, a set of professional development materials, and three presentations at national conferences and one local presentation (already accepted). A presentation for a state conference is still under review.