Teaching for high potential

From the Editor's Desk

Awise teacher of geology once told me, "The present is the key to the past." This simple quote has stayed with me throughout the years, and over time I have learned that the reverse is also true. The past is the key to the present. In preparing for this, my first issue of *Teaching for High Potential*, I found myself sifting through back issues of Gifted Child Quarterly in search of inspiration. I came across The Gifted Child Newsletter, Vol. 1, No. 1, published in 1957, when the association was a mere three years old. Ann F. Isaacs, President at the time, stated the following in her message.

> We hope that we shall be able to fill the need for a periodical which is solely devoted to reporting the news and research in the fields of Psychology and Education of the Gifted. The plan is to publish the NEWSLETTER for one year, nurturing its growth until it achieves maturity as a journal.

The Association held true to this promise, and in the winter of 1958, *Gifted Child Quarterly* was born.

While my hopes for this publication are not entirely identical, they are in sync with the prospect of what the National Association for Gifted Children can provide; accessible, classroom-based materials grounded in sound theory and current best practices in the field of gifted education.

In keeping with this ideal, there are a few changes I wish to make you aware of regarding future issues of *Teaching for High Potential*. You will note the addition of regular columns, two appearing in this issue and four more to debut by the next. Brian Housand's *Technology Untangled* will offer insight into utilizing the internet. Bob Seney's *Books, Books, and more Books* seeks to educate the educator in the use of picture books across multiple age

levels and discipline areas. In addition, Bess Wilson will provide *Smart Cookies*, a quarterly cartoon for your entertainment. Robert Schultz, Eric Mann, Gail Herman, and Jennifer Beasley will offer columns on social and emotional viewpoints, math ideas, arts integration, and curricular connections, respectfully.

This issue features four articles. Sally Dobyns, Megan Dobyns and Elizabeth Connell present educaching as a way to invite and encourage student exploration. Christine Massey and Paul Bierman offer the Vermont Landscape Change Program, a tool designed to aid in primary research and allow users to view the change in landscapes over time. Eric Mann shows us that there is more to math than drill and recitation, and Amy Rettberg inspires us with a push for peer coaching. As with every issue, there is an article informing us on the work of a specific Javits grant recipient. Alicia Cotabish, Ann Biggers, Abby Dragland & Ann Robinson explain The Arkansas Evaluation Initiative, a program designed to promote and facilitate professional development in an effort to increase program evaluation.

If, as I have suggested, "the past is the key to the present," then we, as educators, possess access to a wealth of resources enabling us to provide our students with the highest quality educational experience possible. It is our duty to seek out these resources and share them with others seeking the same goal.

We hope that *Teaching for High Potential* does, and will continue to, add to the body of materials available to you. Be sure to visit the website for additional information and links related to the articles and columns in this issue, as well as new content updated regularly. I hope that you enjoy this issue of THP. I welcome your comments, suggestions, opinions, and ideas.

Jeff Danielian
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NATIONAL ASSOCIATION FOR Gifted Children

In This Issue

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Teaching for High Potential

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Teachers and Kids Dig Old Photos

Christine A. Massey & Paul R. Bierman, *University of Vermont*

Learners of all ages and abilities respond to photographs. From the "Let me see!" voices of young children to the emotions of remembering adults, photographs catalyze engagement, thought, and learning. Because photographs connect learners to places, events, and other people in so many different ways, using photographic images in teaching is something all educators should consider adding to their pedagogical toolboxes. The beauty of images is that they can be used to teach subject matter in a variety of different disciplines.

Landscape Change Program

Starting in 1999, students and faculty at the University of Vermont began creating a public digital archive of historic landscape photographs. The *Landscape Change Program* is a collection of well-described and key-worded images that is available on-line for use by educators. The archive currently includes over 13,000 images documenting 200 years of Vermont's changing landscape and people. Images are easily accessible using a variety of different search and display tools. One can develop personal albums of favorite images, as well as send e-postcards. Tools allow viewers to zoom in and see the details or display image locations on road maps and aerial photographs. Statistical tools allow users to categorize image collections by type, content, and date in order to test hypotheses about change over time.

In order to maintain a fluid and "value-added" collection, the program solicits community involvement in the form of comments, corrections, and new curricular ideas. K-12 educators have developed "Best Practices" example curricula using images selected from the archive. Curricular examples in language arts, social studies, science, and technology use Vermont photographs, but the pedagogy and structure of these curricula are transferable to any location. Indeed, archives of historical images are usually no further away than the local library, town hall, or historical society.

Sense of Place

The *Landscape Change Program* began as a way to document physical geologic change on the Vermont landscape. Supported by a grant in geo-education from the National Science Foundation, program personnel worked intensively with students in a dozen high schools to collect, describe, and analyze the first 800 images. Students were challenged to identify and understand changes to places they or their ancestors knew. Historical context came from local elders, town historians, and town officials, while modern technology served to record the students' work (GPS units, digital re-photography, scanning, image uploading, etc.).

As the archive grew, other providers of images emerged. New images in the program now come from a variety of archives including libraries, historical societies, and personal collections. The *Landscape Change Program* has become a unique source of historical information for environmental planners, cultural historians, students, educators, and the general public. Although physical and natural science images remain central (flooding, mining, deforestation, erosion, excavation, road building), many historic images are useful and attractive to non-scientists because of their architectural, social, or cultural content. Images from the program have been used for books, in papers, on commemorative t-shirts, for environmental and historic preservation research, and for public interpretive signage.

Sensing or understanding place requires not only reference to the physical landscape, but also to the workings of the community that uses the landscape. Landscapes influence human cultural behavior just as people alter the landscape. In modern history, these interactions are documented in photographs, paintings, and maps. For example, images highlighting topography, flooding, or seasons particularly emphasize how landscapes influence the types and location of human infrastructure, agriculture, and lifestyle. Likewise, images of deforestation, mining, road construction and dam building, document human-induced change to the landscape.

Undergraduates at the University of Vermont have used images from the archive to understand the importance of human-landscape interaction and to deepen their own sense of place. One student used nearly 400 images of rivers and streams to assess changes in vegetation along the banks over time. She found that in the 19th and early 20th century, most river banks were devoid of vegetation--a reflection of cultural norms. By 1950, streamside forests began to reappear, likely the result of farm abandonment and the realization that river water quality was important and aided by forested stream banks. Another student used 150 years of Vermont images to link erosion with clear-cutting, verifying the results of modern studies conducted in the Pacific Northwest, an area where forests have been cleared and hill slopes have eroded over the past decades. These data are presented in *GSA Today* (Bierman, Howe, Stanley-Mann, Peabody, Hilke, & Massey, 2005) which is available on-line (see *Important Links*, Page 6).

Educational Materials and Curricula

Efforts to use the *Landscape Change Program* archive in formal educational settings began with the creation of a "stand-alone" on-line tutorial called *Learning Landscapes* (uvm.edu/learninglandscapes). The curriculum uses images and a question/answer format to understand rivers and hill slopes—two fundamental landscape domains that cover the basics of water and land (Figure 1). *Learning Landscapes* has been utilized in first-year undergraduate courses, but would also be applicable to high school learning.
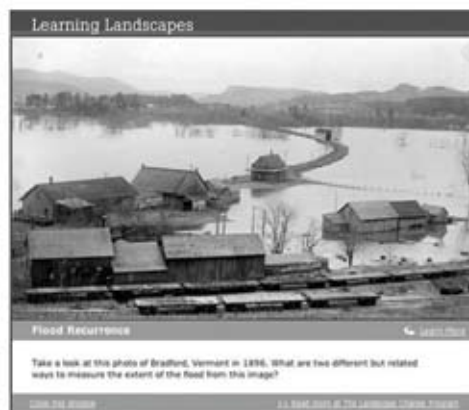

Figure 1. Example inquiry page from Learning Landscapes tutorial (uvm.edu/learninglandscapes).

Under additional National Science Foundation support, work with local educators continues in order to develop "Best Practices" K-12 curricula using *Landscape Change Program* images. Curricula are grouped into two categories--classroom experiences and field experiences. "In-class" curricula utilize images in either hardcopy or on-line form in short lessons within classrooms (see Figure 2 for current offerings). "Field" curricula combine classroom and field learning in longer units of study. Work at this level might include re-photographing, interviewing, adding archive images, mapping, or other hands-on, student-driven activities. Most lessons prepared so far are multi-disciplinary and draw from language arts, social studies, science, and/or technology.

Authentic Learning: Telling Stories, Observing, and Personal Connections

Students like *telling the story* behind the snapshot. They like to decipher and "solve" the inherent mystery of a photo that they've never seen before. The Language Arts curricular examples in Figure 2 include writing stories about photographs using the constructs of storyboards, sensory language, and newspapers. Even in science and social science curricula, unveiling the story behind the photo creates the context for understanding landscape change from those perspec-

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Photographs are objects to be *observed*. Students visualize a personal interpretation of a photograph and build their own understanding. Learning how to see details in photographs takes some practice. The best curricula often introduce the "art of observing" early in the lessons. Dividing photos into regions works well. Whether you break the photo down into the foreground, middle-ground and background, or impose an artificial grid on top to focus in on fine detail, improving observation skills becomes an important learning goal. "Reading" photographs helps students "read" the real world, as well. On field trips, students who had worked with images before going outside connected real landscape features with those they saw previously in photos.

Working with local photographs *connects* students to their own past, and provides a context for their personal experience. People are particularly vested and drawn to ideas and events that relate to their own experiences and knowledge base. Local photographs invoke memories, show familiar things, and provide "ownership." Images get kids involved and excited.

Get Involved

The *Landscape Change Program* provides historical snapshots into the physical and cultural "places" of Vermont's past. The program relies on community members to add information, edit descriptions, identify unknowns, contribute historical images, and re-photograph modern views from historical vantage points.

In summer 2008, the University of Vermont will host a National Dissemination Conference for a broad base of institutions including universities, historical societies, museums, and non-profits hoping to create their own local landscape archives. Ideas and best practices will be showcased regarding the collection of images, database management, hiring of professionals *and* students, K-12 and home school curricula using images, and native American oral interpretations of images. If you are interested in participating, contact the Landscape Change Program, glcp@uvm.edu.

We invite educators of gifted children to give us feedback on existing curricula and share their own ideas about how to use this rich archive of historic landscape images with high potential learners. If you have comments or curricula to share, please contact Christine Massey, LCP Outreach, christine.massey@uvm.edu

Additionally, we offer an on-line course at the University of Vermont during the winter session each January entitled "The Changing Face of Vermont Landscapes." This is a 3-credit, on-line course with an applied field component during the spring semester. Register through the Department of Continuing Education (uvm.edu/wintersession.php) or contact Professor Paul Bierman, paul.bierman@uvm.edu, for more information.

Important Links

University of Vermont Landscape Change Program Archive

http://www.uvm.edu/landscape

University of Vermont Learning Landscapes On-line Tutorial on Rivers and Hillslopes
http://www.uvm.edu/learninglandscapes

University of Vermont Continuing Education Winter Session Courses

http://learn.uvm.edu/wintersession.php

Reference

Geological Society of America (GSA) Today Article

Bierman, P.R., Howe, J., Stanley-Mann, E., Peabody, M., Hilke, J., and Massey, C.A., (April 2005). Old images record landscape change through time, *GSA Today.* 15(4), pp. 4-10 (plus cover). http://www.gsajournals.org/perlserv/?request=get-toc&&issn=1052-5173&volume=15&issue=4

Christine Massey works at the Perkins Museum of Geology at the University of Vermont on grant-funded initiatives. As an Adjunct Instructor in the Education Department, she facilitates science education for students and teachers. Christine holds a BA from Carleton College and an MS from the University of Washington, both in Geology. She worked previously as an environmental consultant and has studied polar ice cores to learn about climate change.

Paul Bierman is a Professor of Geology and Natural Resources at the University of Vermont. Now in his 14th year at UVM, Paul's areas of expertise include understanding how humans and landscapes interact using the fields of hydrology, chemistry, and geomorphology. He has a BA degree from Williams College and his Ph.D. from the University of Washington.

NAGC Standards

The information contained in this article aligns with the following Pre-K-Grade 12 Gifted Program Standards: Curriculum Instruction (2, 3, 5, and 5.1). For a complete copy of the Standards, visit www.nagc.org.

"In-class" Lessons

Science	Language Arts	Social Science	Technology
"GEO-Snapshots" (Gr. 4-5) *geology*	Before and After Stories (Gr. 4+) *storyboards*	Photo Detectives (Gr. 1-2) *town history*	Identifying Landforms (Gr. 3-4) *geomorphology*
Where Have All the Elm Trees Gone? (Gr. 7-8) *invasive species*	"Sense" of Place (Gr. 6-8) *sensory language*	What's the DAM Project? (Gr. 6-8) *people's impact*	
Dams, Logging, Floods, Erosion...Oh My!! (Gr. 9-12) *watersheds*	SCHOOL DAZE GAZETTE: Schools Then and Now (Gr. 9-12) *newspaper*	Time Travel (Gr. 6-12) *lifestyles*	

Figure 2: "In-class" curricula developed using Landscape Change Program *images. Red descriptors refer to topical content areas.*