Modeling Inquiry-Based Learning in Social Studies: The Persistent Issues in History

Laboratory for Virtual Field Experience

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For over eight years, we have built a line of research investigating how we might assist teachers and learners who engage in inquiry about ill-structured social problems with the goal of developing more able democratic decision-makers (e.g., Brush & Saye, 2005; Saye & Brush, 2004). These efforts have led us to the development and refinement of the Persistent Issues in History Network (PIHNet), a web-based teaching and learning environment to support problem-based historical inquiry (PBHI) in social studies classrooms (Brush et al., 2005). However, as we have witnessed the challenges that teachers face in attempting to PBHI, we have found that mastery of an inquiry-based practice by teachers may present a greater barrier to disciplined inquiry than the difficulties we had sought to alleviate in student learners (Saye, Kohlmeier, Brush, Mitchell, & Farmer, 2005).

This has particularly been the case with our pre-service teachers. One the most formidable challenges facing beginning teachers as they struggle to understand teaching methods that may differ from what they experienced as high school students is their lack of experience in the profession. Cognitive flexibility theorists refer to the three dimensions that experts perceive in a problem landscape (Spiro, Collins, & Thota, 2003; Spiro & Jehng, 1990). Novices tend to focus only on the two-dimensional surface features of a case. Experts incorporate an abstract third dimension, broader conceptual structures that help them organize and analyze information in order to reason through a problem or issue. Most beginning teachers have difficulty understanding this “third
dimension” - specific strategies employed by experienced teachers to address issues encountered in the classroom.

For pre-service teachers in our teacher education programs, the best opportunity for learning and practicing inquiry-based teaching strategies occurs through field-based practicum activities such as teaching internships and student teaching. Unfortunately, numerous issues hinder the quantity and quality of the field-based components of their teacher education experiences. Difficulties in finding appropriate placements, coupled with the number of students who need to be placed, many times force the teacher education programs at our institutions to limit the opportunities for field-based practica prior to student teaching (Allen, 2003; Wilson & Floden, 2003). In addition, even when we are able to provide multiple field experiences to pre-service teachers, it is difficult to expose them to quality models of effective PBHI teaching practices that integrate specific history content with a wide range of age and diversity of students (Posner, 1996; Smoot, 2003).

In order to begin to integrate PBHI strategies into their teaching, pre-service teachers need to observe, interact with, and receive targeted feedback on their initial attempts at teaching and teaching related activities from experienced and competent teachers who are skilled at both teaching and mentoring using the PBHI approach. However, many of the teachers who have the skills and experiences to serve as mentors for our pre-service teachers find themselves inundated with other professional responsibilities. As Teale et al. (2002, p. 655) state, “…teachers who provide outstanding…instruction are usually in such demand to assist with staff development and mentoring first- and second-year teachers in their building that they rarely have time to
supervise pre-service field work…” Finally, even if mentor-teachers do have expertise in PBHI and time to mentor pre-service teachers, they may not have the opportunity to model diverse teaching strategies in the limited amount of time a pre-service teacher is present in their classroom.

**Video Cases as a Potential Solution**

The issues we have encountered with providing quality field experiences for our pre-service teachers have led us to explore an addition to the *PIHNet* environment – a video case database of model PBHI practices for use by teachers and teacher educators. The use of video cases is not without precedent – in fact, the case analysis approach has been highly successful in teaching law, medicine, and even social work (Schrader et al., 2003). Similar to teacher education, these are professions in which a wide variety of potential issues can arise in a given professional situation, and educators need to provide opportunities for trainees in these professions to experience as many authentic situations as possible within their training experiences.

Video case databases focusing on K-12 educational settings generally include vignettes of actual K-12 classrooms in which teachers model a specific teaching strategy (such as inquiry learning in science) or more general teaching concept (such as technology integration or classroom management strategies). Generally included in each case are copies of lesson plans, student assessment materials, descriptions of the learners involved in the case, and even pre- and post-interviews with the teacher. These cases can provide pre-service teachers with opportunities to observe and interact with teaching and learning situations that they may not view during internship or practicum activities in K-12 classrooms. These cases may also serve as focal points for discussion of effective
teaching practices during methods classes or other portions of students’ teacher education program (Barab, MaKinster, Moore, & Cunningham, 2001; Derry et al., 2002; Stirling, Williams, & Padgett, 2004).

There are several examples of case-based video databases currently available for teacher educators. One highly developed case-based video database is the Case Technologies for Early Literacy Learning (CTELL) project (Schrader et al., 2003; Teale et al., 2002). The CTELL project focuses on providing anchored video cases of specific teaching practices dealing with reading and literacy instruction. Each web-delivered CTELL case includes videos of classroom lessons, related instructional materials, supplemental resources, and links to additional relevant information. Preliminary research exploring pre-service teachers’ knowledge of effective strategies to teach reading demonstrated similar competencies among pre-service teachers using the CTELL cases versus those participating in more traditional methods experiences (Schrader et al., 2003).

Another example of a video database designed to provide alternative resources to enhance field experiences is the PT3 NETS DVL database developed at Arizona State University (Bitter, Skiera, & Stirling, 2004; Stirling, Williams, & Padgett, 2004). The NETS DVL includes multiple video vignettes of K-12 teachers effectively using technology in their classroom. Each case is specifically aligned with National Educational Technology Standards (NETS) developed by the International Society for Technology in Education (ISTE). This video database is designed to assist teacher education faculty with modeling effective integration of technology in K-12 classrooms, and to provide practicing teachers with a wide variety of resources for enhancing their
classroom activities via technology. Users of the NETS DVL database have access to segments of actual lessons, pre- and post-interviews with teachers, and supplemental materials (e.g., lesson plans, content standards, and assessment materials). This database is currently being used by several teacher education programs in the United States.

The Inquiry Learning Forum (ILF), developed at Indiana University (Barab, MaKinster, Moore, & Cunningham, 2001) is a web-based resource that provides video-based examples of inquiry learning practices in mathematics and science. The ILF was designed to provide practicing teachers with a professional development database of video lessons, teacher and student materials, teacher reflections, and discussion/reflection tools in order to allow participants to “virtually” visit actual classrooms and observe inquiry teaching practices. The ILF is currently being used for professional development activities in Indiana, Massachusetts, Georgia, and South Carolina.

Limitations of Current Video Case Databases

Although the examples above demonstrate the potential of online video cases to support virtual field experiences, there are limitations to these models that hinder their use in teacher education programs. Two major limitations include lack of depth and breadth of the cases and lack of tools to support faculty and students’ effective use of the cases in teacher education classes.

*Lack of breadth and depth of cases.* Most of these databases focus on one specific instructional strategy and use the video cases to provide multiple examples of the chosen strategy. NETS DVL, for example, only focuses on teachers’ effective use of technology in the classroom. Thus, while there are over 25 video vignettes of teachers using technology, a university teacher education instructor would find minimal resources in the
database if she wanted to focus pre-service teacher observation activities on anything other than technology. In addition, since the NETS-DVL is supposed to cover technology integration strategies in numerous content areas and numerous grade levels, the usefulness of the database with specific grade level and content area methods courses is fairly limited.

In contrast, many video case databases currently in existence contain a smaller number of cases that only focus on specific grade levels and/or content areas. The CTELL project, for example, contains cases that focus on reading and literacy skills in K-3 elementary classrooms. Thus, teacher education faculty using any of these resources to supplement traditional field experiences will find them minimally useful except with very specific teacher certification classes.

_Lack of tools to support teacher educators’ use of cases in their programs._ While there are several video databases of teaching practices available to teachers and teacher educators, virtually none of these resources provides any tools to assist educators with integrating the resources into their courses or programs. Very few of these even have tools as simple as online discussion forums as a component of the video database (Bitter, Skiera, & Stirling, 2004). Without appropriate pedagogical tools to assist with the actual use of video cases in teacher education classes, faculty are either forced to create their own activities “from scratch,” (Cullen, 2004), or use the videos for unstructured activities in which pre-service teachers gain very little knowledge.
Addressing the Limitations: The Persistent Issues in History Laboratory for Virtual Field Experiences (PIH-LVFE)

To provide an innovative, state-of-the-art resource for secondary social studies teacher education programs across the country, we have developed the Persistent Issues in History Laboratory for Virtual Field Experience (PIH-LVFE) and integrated the PIH-LVFE into existing PIHNet tools and resources. The PIH-LVFE does not encompass just a collection of video cases and teaching resources. Rather, the PIH-LVFE is an environment that includes both a rich database of video cases and tools to assist teacher education faculty with effectively utilizing those resources to introduce, nurture, and promote the development of teaching skills needed to effectively implement PBHI strategies in secondary classrooms.

The PIH-LVFE addresses the limitations of other video case databases by providing: (1) breadth and depth through an extensive database of online video cases developed with the assistance of a national consortium of experts in the field of social studies education, and (2) online tools to assist teacher educators with using PIH-LVFE cases in structured activities to enhance pre-service teachers’ field experiences and knowledge of PBHI strategies. Each of these components is described in more detail below.

Breadth and Depth: The PIH-LVFE Video Cases

The PIH-LVFE video cases have been designed to focus on specific PBHI strategies and topics that are difficult for pre-service teachers to experience via traditional field experience activities. Components of each video case follow a specific structure (see
Table 1), with video case artifacts organized by Case Lesson and Case Background Information.

Table 1. General components of a PIH-LVFE video case.

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<thead>
<tr>
<th>Video Case Component: Case Lesson</th>
<th>Description</th>
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<tbody>
<tr>
<td>Lesson Summary and Narrative</td>
<td>Online document providing an introduction to the lesson and a narrative explanation of lesson activities with hyperlinks to specific components of the video case. This document serves as an interactive “walk-through” of the lesson.</td>
</tr>
<tr>
<td>Standards Addressed</td>
<td>Online documents of state and national standards addressed in the lesson.</td>
</tr>
<tr>
<td>Lesson Materials</td>
<td>Online documents of scaffolds, assessment materials, websites, etc., used by the teacher during the implementation of the lesson.</td>
</tr>
<tr>
<td>Classroom Video</td>
<td>Online video of classroom lesson. Each lesson contains a series of videos of actual classroom implementation of the instructional activity.</td>
</tr>
<tr>
<td>Lesson Review: Teacher Reflections</td>
<td>Online video of teacher’s reflections of actual lesson implementation. Each classroom video has a corresponding teacher reflection.</td>
</tr>
<tr>
<td>Lesson Review: Methods Expert</td>
<td>Online video of method expert’s review of the specific teaching strategy addressed in the instructional activity.</td>
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<tr>
<th>Video Case Component: Case Background</th>
<th>Description</th>
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<tbody>
<tr>
<td>Teacher Biography</td>
<td>Online document providing background information about the teacher.</td>
</tr>
<tr>
<td>School Information</td>
<td>Online document providing background information about the school and student population.</td>
</tr>
<tr>
<td>Pre-Instruction Teacher Interview</td>
<td>Online video of teacher’s introduction to the lesson. Areas addressed include a brief description of the lesson, a description of the students and school, and standards addressed in the lesson.</td>
</tr>
<tr>
<td>Post-Instruction Teacher Interview</td>
<td>Online video of teacher’s debriefing immediately after lesson implementation. Post-interview questions include effectiveness of lesson with students, scaffolding used to assist students, and potential modifications the lesson.</td>
</tr>
<tr>
<td>Student Materials</td>
<td>Online documents of student materials used in the lesson. These materials include work samples of student assessments.</td>
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</table>

Organization of video case topics. PIH-LVFE cases are organized based on the barriers we have identified as teachers struggle to implement PBHI activities in their classrooms (see Table 2). Thus, the various cases can be used by teacher educators to introduce PBHI practices (using “powerful learning strategies” or “models of exemplary
performance” video cases), assist pre-service teachers with understanding and preparing for the challenges they will face when implementing PBHI activities with their students (using “meeting the challenges of PBHI” video cases), and nurturing pre-service teachers as they develop expertise in PBHI practices throughout their teacher education program (using “developing expertise in PBHI” video cases).

Table 2. Organization of PIH-LVFE cases.

<table>
<thead>
<tr>
<th>PIH-LVFE Category</th>
<th>Category Description</th>
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<tbody>
<tr>
<td>Powerful Learning Strategies</td>
<td>Examples of learning strategies that may be used to encourage problem-based historical inquiry (PBHI)</td>
</tr>
<tr>
<td>Models of Exemplary Performance</td>
<td>Classroom implementations by teachers and students that demonstrate exemplary PBHI standards of performance</td>
</tr>
<tr>
<td>Meeting the Challenges of PBHI</td>
<td>Examples of teachers assisting students in accomplishing difficult PBHI tasks</td>
</tr>
<tr>
<td>Developing Expertise in PBHI</td>
<td>Case studies of teachers conceptualizing and refining PIH teaching practices</td>
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PIH-LVFE cases have also been developed in order to expand the breadth of the video case database as well as the depth. Video cases have been developed to cover a wide range of history topics included in the middle school and high school social studies curriculum. These topics include Washington’s Presidency, the Civil War, the Labor Movement of the 1920s, the Civil Rights Movement, Religious Freedom and the Bill of Rights, and the Cold War. Each case is organized by topic, grade level, case type, and persistent issue addressed (see Figure 1).
Figure 1. PIH-LVFE video case interface.

PIH-LVFE Online Tools

Providing a rich database of video cases focusing on strategies and situations that are difficult to experience in current field placements is only a partial means for providing authentic and relevant virtual field experiences for pre-service teachers. Without the ability for pre-service teachers to critically reflect on teaching practices available in the database, share their reflections with teacher education faculty and their peers, and use the resources available to them as a means for improving their own teaching, the database itself will most likely provide little use to teacher educators who wish to supplement traditional field experiences. Thus, the PIH-LVFE includes both a...
rich database of video cases and tools to assist pre-service teachers and teacher education faculty with effectively utilizing the database. These tools include:

Annotation and reflection tools. One of the needs expressed by teacher education faculty in effectively using video cases in their instruction involves the ability to focus on specific aspects (or segments) of a lesson in order to discuss specific strategies used in specific situations. Pre-service teachers lack the experience and expertise to pinpoint when a skilled teacher used a particular strategy, and more important, why the strategy was used in a specific situation. The PIH-LVFE provides this functionality through modifications to our PIHNet resource linker tool. This tool allows faculty to link additional information (e.g., comments about a video, discussion questions) to a specific video segment (or any other video case component), thus providing pre-service teachers with customized contextual information embedded within the video cases themselves (see Figure 2). Faculty have the ability to store annotations for any item included in the video case, and are able to develop different sets of annotations for different activities they may assign in their classes.
**Collaboration tools.** One of the most effective ways to promote inquiry and exploration of teaching practices is to provide pre-service teachers opportunities for structured discussions focusing on a common collective experience. The PIH-LVFE provides tools to facilitate both in-class and online (asynchronous) discussions of video cases. Using the *PIHNet* forum tool, teacher education faculty have the ability to conduct online discussions focusing on particular video cases, and link specific discussion topics to specific discussion forums (see Figure 3). In addition, pre-service teachers can use the *PIHNet* “journal” tool to provide more detailed answers to discussion questions, and
utilize the information in their journals to assist them in more structured discussions conducted during face-to-face class sessions.

**Figure 3. PIHNet forum.**

*Activity development tools.* Modifications to tools available in the PIHNet environment assist teacher education faculty with combining elements of video cases, annotated resources, and forum topics into cohesive activities focusing on specific teaching issues (see Figure 4). Using the PIHNet activity creator and PIHNet classroom management tools, teacher educators can develop activities in which specific video case
sets and discussion/reflection questions are assigned to their students (or groups of students).

Figure 4. Video case discussion activity.

Current and Future Directions for the PIH-LVFE

As of December 2005, a total of 10 fully-developed cases will available via the PIHNet website (http://pihnet.org). Portions of these cases are currently being used with pre-service teachers at both Auburn University and Indiana University. Our plan is to use data obtained from usability testing and formative evaluation to refine and enhance the PIH-LVFE interface and tools as we continue to integrate additional PIH-LVFE resources into our methods courses in the Spring of 2006. In addition, we plan to examine...
and analyze results of PIH-LVFE activities utilized by methods faculty in order to develop and refine models that will engage pre-service teachers in more meaningful applications of the video case resources promoting PBHI teaching practices.

Our ultimate goal is to continue to refine effective models for preparing pre-service teachers to implement PBHI practices in their future classrooms, and share those models with the professional community. As we stated earlier, simply providing teacher educators with a collection of online video cases does not guarantee that these resources will actually be used. If teacher education faculty lack appropriate tools and models to integrate the PIH-LVFE resources into their existing methods classes, there is little chance that the resources will be utilized to their fullest potential. We view the PIH-LVFE as a tool for facilitating the development of a “community of practitioners” who will both learn from each other and share expertise with each other. As teacher education faculty continue to integrate PIH-LVFE into their courses and programs, they will be able to share their own strategies for disseminating PBHI practice to pre-service teachers, as well as collaborate on the development of additional PIHNet activities and resources.
References


Derry, S. J., Siegel, M., Stampen, J., & the STEP Research Group. (2002). The STEP system for collaborative case-based teacher education: Design, evaluation and


