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RESEARCH BRIEF

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Using Web-based Tools to Support Source Work and Inquiry in Social Studies

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THIS STUDY INVESTIGATED the ways a select group of Secondary 3 Social Studies teachers and students worked with online information sources in Singapore's Social Studies curriculum. The study utilized a set of web-based tools, the Critical Web Reader, to better understand the kinds of skills and knowledge necessary to work with Internet information sources. Research examined the ways these Social Studies teachers designed and implemented curricular resources to support online source work. Findings point to the need for greater scaffolding to support students' conceptual understanding and literacy skills, and suggest the need for greater curricular and professional development efforts to scaffold skills with online information sources in classrooms.

INTRODUCTION

The 21st century offers many opportunities and challenges for educators and students. We live in a time of near boundless information creation, dissemination and consumption. We are but a keystroke, mouse-click or finger-swipe away from a near limitless stream of video clips, blog entries, news articles, social networking messages and more. Understanding and making use of this proliferation of information is no easy task.

Many information sources we encounter online are multimodal—they combine different modes of communication, such as linguistic (through print), visual (through images and graphics), aural (through audio), gestural (through video) and numerical (through graphs and tables). These modes, taken together or independently, can reference other kinds of information and connect to students' prior knowledge and experiences in different ways (Baildon & Damico, 2011). Also, because it is relatively easy to create and disseminate digital texts and because online sources are not vetted or authorship may be difficult to determine, there is a greater likelihood that students will encounter misinformation (e.g., wrong or incomplete information), "doctored" information designed to deliberately deceive people, or useless information (Baildon & Baildon, 2012).

KEY IMPLICATIONS

- Source work in existing Social Studies curriculum can be leveraged to support the development of thinking and literacy skills with online information sources.
- Professional development focused on scaffolding the integration of technology, namely the Internet, in existing curriculum can directly support 21st century learning and teaching.
- Scaffolding that supports thinking procedures must also focus on literacy strategies and conceptual understandings central to skill development.

To complicate matters, we tend to not be careful or critical thinkers with information. We are prone *fast thinking* (Kahneman, 2011), which is often driven by our intuitions, emotions or biases. Good thinking requires *slow thinking* (2011), which is careful, deliberate, critical and disciplined. These are ways of thinking that educators hope to instill in young people.

However, we also know that it is difficult to teach critical thinking (Willingham, 2007). Because of the increasing complexity of issues and information we engage with on a daily basis, there is a need to explicitly teach and practise more deliberate and disciplined ways of thinking with complex information sources. Certain tools and scaffolds exist that can guide this thinking. These include standards and models for thinking (e.g., those used in disciplinary communities); guiding questions to help us focus our attention, ensure thorough analysis, or probe our own thinking; and checklists and graphic organizers that help us follow certain procedures or organize our thinking in more rigorous ways (Beyer, 2008).

This study was premised on the idea that for Social Studies Education to be relevant in the 21st century, it needs to prepare students to live in "new times" and be prepared to handle new media and technologies, manage information overload and complex digital information sources, and understand multifaceted issues as well as different perspectives to effectively participate in diverse global society (Baildon & Damico, 2011). This requires that Social Studies educators are able to use technological tools and resources to promote important educational goals in the 21st century, such as the ability to think critically about information and make well-informed conclusions. This research aimed to better understand the ways teachers and students can be supported to work with complex online information sources to address significant issues in the Secondary 3 Social Studies curriculum.

The project utilized a set of web-based tools, the Critical Web Reader (CWR), to better understand the kinds of skills and knowledge necessary to work with information sources on the Internet. CWR provides analytical, interpretive and evaluative "lenses" to scaffold interactions with online information sources, such as websites, YouTube, Facebook and blogs. CWR enables teachers to design curriculum activities and construct scaffolding to help students develop six target skills in the Social Studies curriculum: making inferences, evaluating reliability, evaluating utility, evaluating claims, comparing and contrasting sources, and constructing evidence-based explanations.

RESEARCH DESIGN

The study is part of a decade-long effort with James Damico (Indiana University) to better understand (a) what it means for teachers and students when the Internet is a primary resource for teaching and learning; (b) the challenges faced when the Internet is used in classrooms; and (c) ways educators, curriculum designers and researchers can respond to these challenges. This collaboration resulted in the design and development of the CWR tools.

This study addressed two core educational problems: (a) students need better guidance to become more skilled and successful readers of Internet information; and (b) teachers need strategies to successfully guide students to work with Internet sources. To address these two problems, we investigated the ways teacher capacity can be developed further to support inquiry-based teaching with online information sources in their existing curriculum. We also wanted to see how students' source skills with online information sources could be developed.

The study drew on several data sources. The first was collected during a 2-day workshop held with 12 Secondary 3 Social Studies teachers to design their curriculum activities and lenses using CWR and included videotape transcripts of each day (3 hours each). We also videotaped and took classroom observation notes of teachers implementing the activities in their classrooms. After the teachers implemented their activities in classrooms, we conducted semi-structured interviews to discuss their reasoning for designing particular activities as well as their reflections on classroom implementation.

CWR takes any online information source and places it within a frame (called lens) that teachers can customize to provide guiding questions, models and suggestions that students use while engaging with each information source. The CWR infrastructure saved all teachers' work to facilitate data collection and management. This allowed us to develop a matrix to record activity titles, types of sources used in each activity, and descriptions of the activities, lenses and scaffolds teachers created. Using a constant comparative method of analysis (Strauss & Corbin, 1990), we coded data sources to discern initial patterns, which were then refined and modified during analysis.

CWR also saved students' work with the online information sources used in teacher-designed activities and a writing tool is embedded within the frame for students to save their work with each source (i.e., their analyses, interpretations and questions). Student responses were organized into two main categories: (a) students' moves when analysing and evaluating sources; and (b) students' understandings of source content and skills. NVivo was used to classify and organize student data sets and we created inductively derived analytical categories, which were further revised and refined to develop findings.

KEY FINDINGS

There are two sets of findings from this project: (a) teachers' work using CWR to design curriculum and

scaffold student learning; and (b) students' work with online sources in teacher-designed activities.

Teacher Findings

The types of CWR activities the teachers designed and implemented in their classrooms varied. We categorized these variations as three stages along a continuum:

- Stage 1: Teachers digitized existing print sources (50–75 words, black and white photos or cartoons) to use with CWR. Teachers basically moved a pen-and-paper exercise into the portal and used scaffolding similar to what they normally used to teach sources.
- Stage 2: Teachers used more complex web sources, such as a Ministry of Health YouTube video, a Facebook page by a Singaporean opposition politician, the website of a politician in the United States lauding Singapore's healthcare system, and a posting on *The Online Citizen*, to have students explore the affordability of healthcare in Singapore. Teachers also began to identify challenges of scaffolding students to evaluate and analyse these sources.
- Stage 3: Teachers took steps toward inquiry (e.g., used inquiry questions and culminating synthesis to frame curriculum activity). They also began to design better scaffolding to evaluate and analyse complex sources by designing a range of scaffolding to focus students' attention on particular aspects or sections of the websites, arranging them in order of complexity, and guiding students to synthesize their findings.

The teachers gave a range of reasons for the design of their activities and lenses. Key factors were the perceived abilities of their students, time constraints in terms of how much they could have students do in their work with sources, and the need to create activities, lenses and scaffolding that supported exam preparation. Understanding teachers in stages along a continuum highlights the ways teachers respond to new ideas and technologies in the context of existing curricula.

This was the first time these teachers had students use computers in their classrooms to support students' work with sources. It was also the first time they used online sources for the kinds of analysis and evaluation they have students perform with hard copy (paper) sources.

The teachers noted a shift in the locus of control. They talked of needing to "let go" since the use of computers in the classroom enabled students to be more autonomous in their learning. The teachers noted that their role shifted toward facilitating and coaching student learning.

The teachers engaged in significant curriculum deliberation to design curricular resources. This was a professional development that engaged teachers in thinking about subject matter, ways to scaffold student learning, and different approaches to teaching and learning. For example, Stage 3 teachers in one school worked collaboratively to design, develop and teach the same activity to their different groups of students. However, the teachers used mainly procedural scaffolding which outlined key steps or procedures they wanted students to perform when working with sources. There were limitations to this type of scaffolding for student learning.

Student Findings

As we continue to analyse student data, we are finding that the technological tools used in this study scaffolded students' work with sources in Social Studies classrooms. The use of technology helped motivate and engage students (e.g., they preferred using computers and authentic online sources, stayed on task, wrote longer responses and were more "systematic" in their work). We also found that students were more self-directed, autonomous and resourceful online (e.g., students used online dictionaries, *Wikipedia* and translation programs to help them understand).

Students were able to use procedural scaffolding provided by the teacher-designed lenses. These typically included process questions that took them through different steps in analysing and evaluating sources.

Students were generally aware of factors used to evaluate sources—provenance, purpose, source content, cross-referencing—but were unsure about how these might be weighed and used together to assess sources. Often students plugged keywords from sources into various formulas. As noted in other studies, thinking skills in Singapore's curriculum are often cast as discrete skill sets or formulaic sets of procedures that students are expected to perform (Baildon & Sim, 2009). Students were able to respond to sequences of questions but many lacked an understanding of why they were performing these steps and how considering provenance, purpose and source content helped them evaluate sources.

As a result, a significant finding is that students require more guidance to better understand key ideas or concepts central to successful skill development. This includes a better understanding of the nature of different source types (e.g., some types of information sources can be more useful and reliable than others); the ways different types of author backgrounds and credentials affect evaluations of provenance; and that while authors may have a range of purposes, some purposes may be viewed as more trustworthy than others.

The students also struggled to fully understand why it is important to analyse source content or why it is important to cross-reference sources to help determine the reliability of sources. They failed to fully understand why they should determine whether a source is biased and how this may (or may not) help them evaluate a source's reliability. We also found a need for more focus on comprehension skills to support conceptual

or content understanding. Some students were unable to adequately understand sources, some had limited background knowledge about the topic they were investigating, and some struggled because of the complexity of the sources. More literacy scaffolding is necessary to help students manage these challenges.

IMPLICATIONS

The findings demonstrate the value of leveraging the strengths of Social Studies Education in Singapore. The thinking skills required in the Social Studies curriculum and the forms of scaffolding currently used to support student learning are an essential foundation for 21st century learning and teaching. Yet, it is crucial to take several next steps to ensure students are using the Internet in classrooms to develop the skills and literacies necessary to deal with complex information sources and issues they will encounter as workers, consumers and citizens.

For Professional Development

The professional development opportunities, which were central to this research study, helped teachers extend their instructional repertoire to infuse online sources in their teaching, have students engage different perspectives on issues, and scaffold student work with complex online sources.

The following are several ways to help more Social Studies teachers experience these results:

1. conduct more teacher workshops and trainings with specific focus on how to better scaffold students' learning with Internet information sources;
2. teachers at Stage 3 to share their curricular resources with Stage 1 and Stage 2 teachers, which CWR easily allows; and
3. conduct further research on how teachers can be guided to move to Stage 3 and how students develop the conceptual understandings and literacy skills necessary to perform the source-based skills and inquire more deeply into the complex issues.

For Practice

The centrality of source work and the source-based skills in the curriculum hold promise for instruction more aligned with 21st century education. The next key step is for teachers to include more complex online sources of information, such as Facebook, YouTube, blogs and websites, and to use scaffolds (perhaps those developed by Stage 3 teachers) to help students carefully and critically evaluate these sources.

There is also a need for greater focus on the literacy skills necessary for students to read and understand information sources. These skills include organizing text information, connecting to necessary background knowledge, monitoring one's own comprehension, and being able to summarize information (Damico, 2013).

For Teacher Training

Our findings suggest that prospective and experienced teachers need opportunities to engage critically with web-based information sources in order to learn how they might better support their students to make sense of the world through the analysis, interpretation and deliberation of complex online sources. By doing this work in their professional learning, they can begin to envision ways to develop teaching strategies and create curricular resources better aligned with the practices necessary for living in new and emerging social, cultural and technological contexts.

REFERENCES

Baildon, M., & Baildon, R. (2012). Evaluating online sources: Helping students determine trustworthiness, readability, and usefulness. *Social Studies and the Young Learner*, *24*(4), 11–14.

Baildon, M., & Damico, J. (2011a). *Social studies as new literacies in a global society: Relational cosmopolitanism in the classroom*. New York, NY: Routledge.

Baildon, M., & Damico, J. (2011b). Judging credibility on the Internet: The case of 9/11 and loose change. *Social Education*, *75*(3), 269–273.

Baildon, M., & Sim, J. B.-Y. (2009). Notions of criticality: Singaporean teachers' perspectives of critical thinking in social studies. *Cambridge Journal of Education*, *39*(4), 407–422.

Beyer, B. K. (2008). What research tells us about teaching thinking skills. *The Social Studies*, *Sept/Oct*, 223–231.

Damico, J. (2013). How to help all students with evidence-based reading and writing during an inquiry activity. *HSSE Online*, *2*(1), 36–43. Retrieved from http://www .hsseonline.edu.sg/sites/default/files /uploaded/journal_articles/James-final.pdf

Kahneman, D. (2011). *Thinking, fast and slow*. New York, NY: Farrar, Straus and Giroux.

Straus, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.

Willingham, D. T. (2007). Critical thinking: Why is it so hard to teach? *American Educator*, *Summer*, 8–19.

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