Examining Original Political Cartoon Methodology: Concept Maps and Substitution Lists

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Previous research on classroom uses for political cartoons identified two negative trends:  
creative stagnation (as teachers utilized them solely for interpretation) and age limitation (as  
researchers suggested they fit best with gifted and older students).  Recent scholarship has  
addressed both trends by enabling young adolescent students to creatively express newly  
generated understandings through construction of original political cartoons.  During such  
authentic assessment activities, students demonstrated high levels of criticality by using effective  
and efficient technologies to create original political cartoons, which then elicited constructive  
whole class interpretative discussions.  This prior research did not detail specific  
methodological steps that positively influenced students’ original political cartoons.  This paper  
compares students’ original political cartoons generated from two methodological approaches  
that differ in two small, yet consequential steps.  One teacher required students to utilize concept  
maps and substitution lists prior to original political cartoon construction while the other did not.  
Based on the collected data, these two steps enabled the former teacher’s students to more  
effectively incorporate intricate and complex encoded messages through the use of abstract  
symbolism and complementary textual statements.  The findings prove meaningful for teachers  
and researchers interested in enabling students’ creative and critical expressions of historical  
thinking.

Key Words:  Social studies; political cartoons, concept maps, substitution list, critical  
thinking, symbolism

Introduction

Since students’ engagement is strongly connected to academic success, social studies  
educators must elicit students’ interests using relevant and rich content and enticing methods that  
facilitate active thinking (Brozo & Simpson, 2007; Cook-Sather, 2002, Lindquist, 2002).  
History education researchers (Dewey, 1933; Wineburg, 2001) assert primary and secondary  
historical documents provide a rich context challenging students’ thinking through interpretative  
activities that may enable comprehension.  Since interpretation and comprehension are not the
highest tiers of criticality (Anderson & Krathwohl, 2001; Bloom, 1956), constructivist educational theorists encourage teachers to provide students with opportunities to innovatively articulate newly constructed understandings (Brozo & Simpson, 2007; Sunal & Haas, 2008). Students’ original political cartooning enables such creative expressions of learning derived from analysis of complex content. Previous research on original political cartooning indicates its potential to elicit enthusiasm, criticality, and historical thinking (Bickford, 2010a, 2010b) as both an authentic assessment and a teaching tool for whole class interpretative discussions (Bickford, 2011). This research project examines specific methodological steps to determine possible effects on students’ abilities to encode complex messages within original political cartoons.

While many researchers have examined various classroom uses for political cartoons generated from professional cartoonists (Dodds, 2007; Risinger & Heitzmann, 2008; Rolling, 2008; Werner, 2004), some have asserted they have been ineffectively utilized (Bickford, 2010a, 2010b; Diamond, 2002), and others have offered practical suggestions for targeted age groups. Beth Dougherty (2002), for instance, suggested high school teachers and college professors should provide context, direct students’ attention to details, and encourage various interpretative methods and assessments. These suggestions about age-appropriate grade levels and methods are not anomalous because, as a meta-analysis of the research literature indicates, teachers employ political cartoons mostly with gifted, high school, and college students and usually only for students’ interpretation (Bickford, 2010a, 2010b). Both trends are problematic.

While many researchers assert young students are capable of interpretative thinking (Anderson & Krathwohl, 2001; Russell & Waters, 2010; Sunal & Haas, 2008; Welton, 2005) and some perceived pre-adolescent students to be competent with cartoon analyses (Larson, 1999; Rolling, 2008), most stressed only gifted and secondary students were qualified for such thinking (Dougherty, 2002; Edwards, 1999a, 1999b; El Refaie, 2009; Frost, 2000; Greene, 2001; Heitzman, 2000; Johnstone & Nakhleh, 1987; Larson, 1999; Martinez-Fernandez, 1998; Mjagkij & Cantu, 1999; Percy, 1999; Ramsey, 2000; Risinger & Heitzmann, 2008; Sperry & Sperry, 2007; Thomas, 2004; Werner, 2002, 2003). Researchers in cognition, however, conclude young students are quite able to critically think at the highest levels (Anderson & Krathwohl, 2001; Bloom, 1956). This age-bias is, at best, restrictive for teachers who want to challenge students’ cognitive thinking with complex content.

Teachers’ uses of political cartoons for students’ interpretation is a popular approach as judged by the plethora of contemporary research (Edwards, 1999a, 1999b; Frost, 2000; Johnstone & Nakhleh, 1987; Greene, 2001; Larson, 1999; Martinez-Fernandez, 1998; Mjagkij & Cantu, 1999; Percy, 1999; Ramsey, 2000; Risinger & Heitzmann, 2008; Rolling, 2008; Sperry & Sperry, 2007; Thomas, 2004; Werner, 2004). Such interpretative activities, however, do not represent the highest tiers of critical thinking (Anderson & Krathwohl, 2001; Bloom, 1956), do not necessarily elicit historical thinking (Sunal & Haas, 2008; Welton, 2005; Wineburg, 2001), and do not enable creative expressions of new ideas (Swan, Hofer, & Levstik, 2007; Zemelman, Daniels, & Hyde, 1998). Since professional cartoonists rarely disclose their intent or meaning behind encoded symbolism, interpretative disagreements between teachers and students cannot be resolved within the classroom context. Due to the teacher’s prominence in the class, such open discussions may be unproductive as some students are resigned to “guess what the teacher is thinking” (Smith & Wilhelm, 2006). Whereas a few researchers encouraged teachers to allow students to generate imagery in order to better understand the creation process (Greene, 2001; Larson, 1999; Rolling, 2008), these activities – while not unproductive – did not facilitate students’ independent, authentic, and creative expressions of learning. As some researchers
enabled students to create a cartoon or complete a partly-finished teacher-generated cartoon (Rule & Auge, 2005; Sallis, Rule, & Jennings, 2009), these were intended to enable science vocabulary comprehension and not assess students’ understandings of social studies or history content. As such, this pattern of reliance on interpretation is limiting, and there is a dearth of research on students’ original work within the field of social studies education.

Three research projects have confronted both the age-bias and interpretation-only pattern associated with political cartoons in social studies or history classroom (Bickford, 2010a, 2010b, 2011). I demonstrated students can create an original political cartoon to express newly constructed understandings as a form of authentic assessment (Bickford, 2010a). While acknowledging rewards gained from pencil and paper cartoon creations in certain research (Rule & Auge, 2005; Sallis, Rule, & Jennings, 2009), I revealed the efficiency and effectiveness of utilizing ordinary technologies (Bickford, 2010b). Further, while complementing research on young adolescent (middle school) students’ motivation when working with cartoons, humor, and complex content (Rule & Auge, 2005; Sallis, Rule, & Jennings, 2009), my findings suggested such students were quite skillful at analytical discussions about encoded messages, abstract symbolism, supplementary textual material, and the cartoonists’ intent with complicated social studies and history content (Bickford, 2010a, 2010b, 2011). As proactive responses to the aforementioned problematic trends, such research proved illustrative. These research projects, however, did not investigate the methodological steps that positively influenced students’ original political cartoons.

To best address this genuine concern, I compared two similar, yet distinct methodological approaches. Two 8th grade middle school social studies educators in different schools each employed comparable approaches to enable students to construct original political cartoons. The only nuanced difference is that one teacher used concept maps and substitution lists. While described later in detail, concept maps (a graphic organizer in which students map their understandings) and substitution lists (an inventory of analogous ideas) are inextricably intertwined methodologies.

This mixed-method research comprehensively examined, categorized, and compared the students’ original political cartoons generated from these two different approaches. Examination of the data pool, while relatively small in size, resulted in a clear demonstration of the positive and consequential impact that concept maps and substitution lists had on one group of students’ abilities to encode multifaceted messages utilizing abstract symbolism and supplementary text as a means of clearly expressing an opinion through original political cartoons. For purposes of this research paper, abstract symbolism signifies incorporated visual images representing tangible concepts such as names and locations; textual statement denotes written statements included within the original political cartoon; and encoded message represents the blending of both abstract symbolism and complementary textual statements.

For clarity, this paper is divided into four sections. The first section justifies the use of a mixed-method format and outlines the two comparable, yet distinct methodological approaches that enabled similar aged students in separate locations to generate original political cartoons. It defines and delineates concept maps and substitution lists, which complement each other, as the only differences between the two educators’ methodological approaches. The second section on the categories of original political cartoons organizes students’ original political cartoons from both classes according to emergent and tangible patterns. The third section offers authentic examples of both students’ concept maps and substitution lists. It also proffers comparative data.
The final section summarizes findings, demarcates applicability for classroom teachers, and suggests areas of future study for researchers.

**Method**

A mixed-methods approach was used in analyzing the cartoons to discover which condition enabled students to more effectively express understandings through the cartoons. First, I qualitatively analyzed cartoons to examine the messages encoded through the use of abstract symbolism and complementary textual statements. This step specifically determined which parts displayed abstract symbolism and which delivered textual messages. Then, the numbers of instances of each were counted in a quantitative analysis. The median number of instances of each, per cartoon, was calculated and this measure was used to separate the cartoons into two categories: transparent cartoons and complex cartoons. The relative numbers of each type of cartoon produced in each class was used to determine the more effective classroom practice. While the quantitative and qualitative research elements complement each other, there are limitations because the data pool is relatively small in scope. Broad conclusions cannot be drawn, findings cannot be decontextualized, and the activity’s impact on the students’ gained knowledge cannot be definitively determined. The findings, however, cohere with the data gathered in this specific example. These limitations, while certainly not negligible, are consistent with other mixed-methods research (Denzin & Lincoln, 2003; Janesick, 2000; Merriam, 1998).

Mr. Murphy and Mr. Carl (all names are pseudonyms), two middle school educators in separate schools, had 28 and 27 students in their respective classes. Whereas each teacher had utilized original political cartoons as an authentic form of assessment in previous years, this was their students’ first exposure to original political cartoon construction. While fully involved in the teaching and data collection aspects of the research, these educators were unaware of each other. I worked with each teacher separately, did not take part in any aspect of the classroom teaching, and utilized data from one randomly selected class of each teacher. Thus, I assert these data are similar enough to be compared and, due to the nuanced differences in methodological approaches, distinct enough to be contrasted. Acknowledging the data pool’s relatively small size, my approach enabled a detailed examination of original political cartoons generated from two comparable, yet distinct, methodologies.

Taking into account such similarities as geographical locale (Midwest towns of similar size), the schools’ socio-economic demography (around 40% of the students were on some form of free/reduced lunch), the schools’ middle school philosophy, the class size, and teachers’ gender, experience (each had over 20 years prior teaching experience), and pedagogical background (secondary social studies certification), I can claim both educators were quite similar and taught in comparable middle school contexts. The only noticeable difference was Mr. Carl’s inclusion of concept maps and substitution lists, which are detailed below.

Both Mr. Murphy and Mr. Carl taught approximately ten day units on Native American history and culture. Each teacher employed similar primary documents and comparable textbooks, utilized a variety of whole class and small group activities, and required students to use Microsoft PowerPoint™, Microsoft Paint™, and various Internet images to generate original political cartoons. For all intents and purposes, the teachers utilized similar content and methods until the students began the process of original political cartoon creation.

Before Mr. Carl described the technologies for students to use when creating original political cartoons, he required they construct a concept map. Reading specialists describe a
concept map as a graphic organizer of interconnected ideas that utilizes words, arrow lines, and shapes for arrangement to facilitate students’ understandings (Brozo & Simpson, 2007; Kincheloe & Steinberg, 1998; Sejnost & Thiese, 2003; Vacca & Vacca, 2008). Analogous to a word web, concept maps enable educators to identify students’ misunderstandings and misconceptions (Smith & Wilhelm, 2006; Wilhelm, Baker, & Hackett, 2001). Mr. Carl’s students employed concept maps to organize their understandings of the content. Starting with blank paper, the students first listed tribal names of Native Americans in the center, then created separate branches for relevant topics such as history, culture, and conflicts with the U.S. army. This 10 minute individual activity preceded a ten minute whole class discussion about the content of the students’ concept maps.

Mr. Carl next required students to generate a substitution list for each item on their concept map. In doing so, students simply replaced abstract or complicated names and events on the concept map with ideas that could be visually represented using concrete Internet imagery. While this activity has not been researched as extensively as have concept maps, I perceived it to be an age appropriate and effective complement to students’ concept maps. This 10 minute individual activity preceded a lively 10 minute whole class discussion about the content of students’ substitution lists.

Mr. Carl’s use of concept maps and substitution lists, which combined to take the better part of one class period, were the only tangible methodological differences between his and Mr. Murphy’s approach. These concept maps and substitution lists, two small but significant and complementary steps, enabled Mr. Carl’s students to generate long lists of possible ways in which to utilize abstract symbolism and supplementary text to encode intricate messages within original political cartoons.

Students in both classes then spent two consecutive periods locating and modifying Internet imagery and using Microsoft PowerPoint™ and Microsoft Paint™ to encode abstract visual messages and insert complementary text to their original political cartoons. Both teachers noted students’ unsolicited, frequent, and positive comments about enjoying their time expressing newly developed understandings in a novel way using effective and efficient technologies. These comments support previous research on students’ motivation when creatively adapting imagery (Rule & Auge, 2005; Sallis, Rule, & Jennings, 2009). While only nuanced differences – concept maps and substitution lists – separated the teachers’ methodological approach, students’ original political cartoons from both classes readily fit within two discernable groups. The subsequent section categorizes the students’ original political cartoons and proffers representative examples.

Categories of Original Political Cartoons
Whereas Werner (2003) utilized the term “visual rhetorical devices” to signify the merger of visual imagery and textual content within political cartoons, I thought these concepts need to be distinguished. Abstract symbolism denotes complicated and complex concepts represented concretely within visual imagery. An example might be substituting a concrete image of Arapaho wampum (or decorative beaded cloth used for ceremonial or monetary purposes) for the abstract concept of the Arapaho tribe. Textual statements signify written statements incorporated within the original political cartoon to more explicitly guide the reader. An example might be a quote from Chief Joseph next to an image of Chief Joseph to facilitate direct connections. Encoded messages are the unification of both abstract symbolism and textual statements seen
when a student deftly employed both types of visual rhetorical devices within the same original political cartoon.

All students’ original political cartoons incorporated encoded messages because they utilized, to varying degrees, both abstract symbolism and complementary textual statements. For categorization purposes, I performed a content analysis of symbolism and text for all students’ original political cartoons. This measure indicated a median of each (three for abstract symbolism; four for complementary textual statements), which I signified as a line of separation distinguishing complex original political cartoons from transparent original political cartoons. The titles of the categories denote the frequency of employed abstract symbolism and complementary textual statements, which combined to represent intricate encoded messages.

Transparent original political cartoons had a relatively simplistic encoded message, based on the presence of two or less representations of abstract symbolism coupled with three or less complementary textual statements. Complex original political cartoons had a relatively intricate encoded message, based on the presence of three or more representations of abstract symbolism coupled with four or more complementary textual statements. Figures 1 to 4 are representative illustrations of transparent original political cartoons, with two original political cartoons taken from each class.

*Figure 1. “Ghost Dance” Imagery adapted from The National Archives and Records Administration Digital Collections.*
Figure 2. “Wounded Knee”

Imagery adapted from The National Archives and Records Administration Digital Collections.

Figure 3. “March to Canada”

Imagery adapted from The National Archives and Records Administration Digital Collections.
Figures 1-4 were categorized as examples of transparent original political cartoons due to the presence of two or less representations of abstract symbolism coupled with three or less complementary textual statements. While not the focus of this research, it is notable that the above students’ original political cartoons demonstrated divergent and creative expressions of newly generated understandings through encoded messages. Figures 5-8 are representative illustrations of complex original political cartoons, with two taken from each class.

Figure 4. “Effects of the Sand Creek Massacre”
Imagery adapted from The National Archives and Records Administration Digital Collections.

Figure 5. “Peace and War”
Imagery adapted from The National Archives and Records Administration Digital Collections.
Figure 6. “The Arapaho Ghost Dance”

Imagery adapted from The National Archives and Records Administration Digital Collections.

Figure 7. “Cheyenne Fight Back”

Imagery adapted from The National Archives and Records Administration Digital Collections.
Figures 5-8, as mentioned, were illustrative examples of complex original political cartoons because each had three or more representations of abstract symbolism coupled with four or more complementary textual statements. Students creatively communicated complicated encoded messages within their individual original political cartoons.

While it is accurate to say that students from both classes created original political cartoons fitting within both categories, it is misleading to state that students generated a relatively equal number of original political cartoons for each category. The percentage of students’ original political cartoons classified within each category differed significantly between the classes. This suggests that the differing methodological conditions enabling original political cartoon construction impacted students’ final products. The following section disentangles the data to comprehensively examine the seemingly comparable methodologies while offering illustrative examples of concept maps and substitution lists.

**Concept Maps, Substitution Lists, and Original Political Cartoons**

While only nuanced differences separated the two teachers’ methodological approaches, I identified a pattern of complexity within students’ original political cartoons. This section presents comparative data regarding the influence that concept maps and substitution lists had on students’ original political cartoons. Based on the data presented below, Mr. Carl’s uses of concept maps and substitution lists appear to be the catalyst for the discernable pattern. Mr. Carl’s 27 original student political cartoons and Mr. Murphy’s 28 original student political cartoons represent the data pool seen in Figure 9. The data indicate the positive impact concept maps and substitution lists – used only in Mr. Carl’s class – had students’ original political cartoons.
The data in Figure 9 demonstrate that students in Mr. Carl’s class constructed complex original political cartoons at a rate of almost three-to-one whereas students in Mr. Murphy’s class created transparent original political cartoons at a rate of almost two-to-one. Taking into consideration the similarities in teachers’ pedagogical background, experience, gender, and days devoted to teaching comparable historical content, the similarities in the schools’ demography, locale, and middle school philosophy, and the students’ age and uses of the same technologies during original political cartoon construction, Mr. Carl’s use of concept maps and substitution lists appear to be the only difference. This suggests that concept maps and substitution lists positively and substantively influenced the complexity of students’ original political cartoons in this research context. Figures 10 and 11 are representative examples.

Figure 9. Impact of Methodology on Original Political Cartoons.

Figure 10. Concept Map and Substitution List Used to Generate Figure 1.
The concept maps in Figures 10 and 11 were the basis for substitution lists discussed within the context of a whole class discussion. The student who generated the concept map and substitution list seen in Figure 10 did so when constructing the original political cartoon signified as Figure 1. The same connection is seen between the concept map and substitution list in Figure 11 and the original political cartoon denoted as Figure 8. In both cases, the individual student created a concept map which facilitated his/her use of a substitution list. To avoid redundancy, I will not detail the obvious parallels between the students’ notes in Figures 10 and 11 and the corresponding encoded messages, abstract symbolism, and complementary textual statements within Figures 1 and 8.

The data presented in Figure 9 indicated that students using the age-appropriate and practical methods expressed more complex encoded messages based on the fusion of abstract symbolism and textual statements within original political cartoons than students not exposed to such methods. In this research context, students who used concept maps and substitution lists incorporated more visual images that represented tangible concepts (abstract symbolism) and utilized meaningful and complementary wording (textual statements) more frequently than students who did not use such methods. Thus, the data suggest that this teacher’s employment of such methods enabled his students to more effectively and efficiently express newly developed authentic understandings in a complex way.

Conclusions and Extensions

As previous researchers have shown (Rule & Auge, 2005; Sallis, Rule, & Jennings, 2009), the teachers’ use of visual imagery both motivated and focused students. Original political cartoons – as an authentic assessment – elicited students’ engagement, criticality,
demonstrable expressions of newly generated understandings, and healthy interpretative
discussions (Bickford, 2010a, 2010b). Stated differently, such original political cartoon work
enabled students to apply knowledge in new and different ways, to engage in all tiers of critical
thinking (Anderson & Krathwohl, 2001; Bloom, 1956), and historical thinking (Dewey, 1933;
Welton, 2005; Wineburg, 2001) as they create a media-based product to express an opinion.
While previous research compared science curricula with and without cartoons (Rule & Auge,
2005), offered methodological suggestions for science content (Sallis, Rule, & Jennings, 2009),
and proffered effective technologies to facilitate students’ thinking during original political
cartoon creation (Bickford, 2010a, 2010b), it had not comparatively examined the
methodological conditions that enabled such positive displays of learning. The findings within
this research isolated and measured the impact of two complementary methodological steps –
concept maps and substitution lists – on students’ original political cartoons.

After categorizing the students’ original political cartoons, I demonstrated that the use of
concept maps and substitution lists enhanced the complexity of ideas represented within the
cartoons. While the data compared only two classes of students, the results suggested a positive
and consequential influence in this specific context of students using concept maps and
substitution lists. These findings, while certainly not generalizable or broad in scope, prove
meaningful for both social studies teachers and researchers interested in exploring the potential
of enabling students’ creative and original expressions of historical thinking through original
political cartoons. The findings suggest, in this specific situation, the positive impact of two
seemingly small methodological steps. The success of Mr. Carl’s implementation of concept
maps and substitution lists – as assessed by his students’ complexity of encoded messages within
original political cartoons – indicates ways to facilitate students’ expressions of more
complicated ideas within original political cartoons. The results suggest these methodological
steps consequentially and positively impacted students’ expressions of learning, which
supplements previous researchers’ work with cartoons related to science content (Rule & Auge,

Researchers’ understandings about the reasons for a method’s success are as important as
teachers’ applications of successful methods. For this reason, future research should
comparatively examine different forms of concept maps, scrutinize substitution lists, disentangle
other aspects of the methodological approaches to original political cartoons, assess such
variables with other ages of students, and examine how original political cartoons might be
adapted for other purposes and within other curricula.
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