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USING CLASSROOM ARTIFACTS TO MEASURE THE EFFICACY OF A PROFESSIONAL DEVELOPMENT

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USING CLASSROOM ARTIFACTS TO MEASURE THE EFFICACY OF PROFESSIONAL DEVELOPMENT

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Abstract

This report describes a classroom artifact measure and presents early findings from an efficacy study of WestEd's Reading Apprenticeship (RA) professional development program. The professional development is designed to teach high school teachers how to integrate subject-specific literacy instruction into their regular curricula. The current RA study is notable in that it is the first to include random assignment in its design. The National Center for Research on Evaluation, Standards, and Student Testing (CRESST) designed a teacher assignment instrument to address the question of whether treatment teachers demonstrate greater integration of literacy into their instructional practice than control teachers. Early findings based on preliminary data from participating history teachers indicate that treatment teachers outperformed control teachers on 6 out of 11 rubric dimensions. These dimensions address opportunities for reading in the assignment, the strategies in place to support successful reading, teacher support for reading engagement, and student feedback. Data collection will conclude at end of the 2008–2009 school year, followed by a final report.

Introduction

This report describes the development and use of a new, artifact-based measure of teachers‘ instructional practice. Developed as part of a randomized field trial of the Reading Apprenticeship (RA) professional development program, the assignment-based measure represents a generalizable strategy for using teacher assignments as a classroom implementation measure. The assignments, with associated explanatory materials and student work, present a window into teachers' instructional practice and their analysis can be customized to reflect an intervention's particular emphases. In the sections that follow, we start with the context of the RA intervention and background on the assignment instrument and then describe the field test methodology, and preliminary results on instrument reliability and sensitivity to program effects.

The RA professional development is designed to teach high school history and biology teachers how to incorporate content-specific literacy instruction into their practice, with the ultimate goal of improving student literacy and content understanding. RA has been

evaluated in the past (Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Greenleaf, Brown, & Litman, 2004; Schoenbach, Greenleaf, Cziko, & Hurtwitz, 1999), but this is the first randomized study, and few literacy studies that specifically focus on high school content area classrooms (Calfee & Miller, 2004; Moje et al., 2004), as we do here.

While the study utilizes a range of both teacher and student data, this report describes the CRESST-designed teacher assignment instrument. Additionally, we present early reliability and sensitivity analyses. Data collection is still in progress and will conclude at the end of 2009, at which point our final report will be produced.

Background

The RA intervention was developed to improve adolescent literacy levels by increasing content area teachers' ability to integrate literacy instruction into their regular curriculum. Historically more policy and instructional attention has been paid to reading in elementary grades rather than supporting continued adolescent literacy gains (Biancarosa & Snow, 2004; Durkin, 1978). A RAND Reading Study Group report (Snow, 2002) also indicated that reading growth for middle school and high school students slows, sometimes significantly. This inattention to continued literacy instruction has had detrimental consequences for American adolescents. For example, recent National Assessment of Educational Progress (NAEP) testing demonstrated that 25% of students tested did not have basic literacy skills, while only a small minority had achieved the levels of advanced literacy necessary for success in the information-focused economy of the 21st century. (Donahue, Voelkl, Campbell, & Mazzeo, 1999; Mullis et al., 1994; NAEP, 2002, 2003). Without adequate and advanced literacy levels, all students will struggle to attain content-area knowledge and comprehension.

Unfortunately, non-language arts high school teachers often lack the needed instructional strategies, resources, and knowledge about reading comprehension to effectively support adolescent literacy development (Alvermann & Moore, 1991; Duffy et al., 1987; Duke, 2000; Fielding & Pearson, 1994; Richardson, 1994; Snow, 2002). WestEd's RA instructional framework targets this need (Greenleaf & Katz, 2004; Greenleaf & Schoenbach, 2001, 2004). Research has demonstrated that even when teachers are trained in using reading comprehension strategies, they still struggle to fully integrate them into their content-area instruction. (Alvermann & Moore, 1991; Duffy et al., 1987; Duke, 2000; Fielding & Pearson, 1994; Richardson, 1994; Snow, 2002).

The RA intervention thus includes a key professional development component to help teachers bridge the gap between training and classroom implementation. Previous research

has demonstrated that students in RA classrooms make positive gains in both reading achievement and academic engagement (Greenleaf et al., 2001; Greenleaf, Brown, & Litman, 2004; Schoenbach et al., 1999).

For this study, the intervention began with a 5-day training session on the RA instructional framework led by a trained consultant during the summer before the first implementation year. At the start of the new school year in the fall, teachers began to implement the RA instructional framework in their history classrooms. After the first year of implementation before the start of school, teachers also met for a 2-day regional video conference in which they discussed lesson planning for how to best integrate RA strategies and resources into their curriculum. Teacher assignment collection began 1 year after the first implementation year.

Description of Assignment Instrument and Scoring Rubric

Instrument

Although teacher surveys and/or classroom observations are most often utilized to evaluate instruction, both of these measures have limitations. Teacher surveys are efficient and cost-effective and are therefore often used for large-scale studies. However, they rely on self-reported data, which can be inaccurate (Mayer, 1999; Spilanne & Zeuli, 1999). On the other hand, classroom observations can provide a detailed picture of what is happening in the classroom, but due to their high cost, they are typically limited to small-scale studies (Matsumura, Garnier, Pascal, & Valdés, 2004). Using teacher assignment ratings to assess instructional practice provides an efficient, economically viable, and reliable alternative (Aschebacher, 1999; Clare, 2000; Matsumura, Garnier et al., 2002). Previous CRESST research in conjunction with the Los Angeles Unified School District (LAUSD) demonstrated the effectiveness of using teacher assignments as a method to measure teacher practice. (Aschbacher, 1999; Clare, 2000). Further CRESST research demonstrated the reliability and validity of the teacher assignment analysis method. (Clare & Aschbacher, 2001; Matsumura, 2003).

The teacher assignment instrument for this study includes a cover sheet (see Appendix A) with prompts highlighting various aspects of the lesson design (e.g., standards addressed, texts included, opportunities for pair and group work, etc.). To supplement the completed coversheet, teachers submit samples of high, medium, and low student work in addition to handouts and/or texts they made available to students. Both control and treatment teachers are required to submit two assignments, one from the beginning of the school year on the topic of Industrialization, Immigration, and Urbanization; and one from the end of the school

year on the topic of World War II. To identify teacher assignment topics, CRESST and WestEd surveyed participating teachers to determine which topics were most often taught at the start and end of the school year.

CRESST teacher assignment rubrics were originally designed to measure the quality of teacher instruction. We modified these rubrics to measure RA implementation with a focus on three constructs: (a) *literacy instruction*, (b) *content instruction*, and (c) *monitoring student learning* (see Figure 1). Each construct reflects various aspects of the professional development program.

The RA Framework directly informed the literacy instruction construct design (Greenleaf & Schoenbach, 2004; Greenleaf, Brown, & Litman, 2004). This construct focuses on opportunities to read during the lesson, specific strategies utilized to make reading successful, and teacher support. Given the professional development's emphasis on literacy improvement, this construct is the most significant in the rubric.

Constructs		
Literacy Instruction	Content Instruction	Monitoring Student Learning
Measures		
Reading Opportunities	Cognitive Challenge	Adjusting Instruction
Reading Comprehension Strategies	Support for Cognitive Challenge	Student Feedback
Metacognitive Processes		
Disciplinary Reading		
Collaborative Meaning Making		
Support for Reading Engagement		
Accommodations for Reading		

Figure 1. Teacher Assignment constructs and measures.

The *content instruction* construct measures the challenge level students were required to meet when engaging with history content. Additionally, this construct includes teacher support for history content learning. Instruction that provides high academic challenge (Marazano, Pickering, & Pollock, 2001; Matsumura, Patthey-Chavez, Valdés, & Garnier, 2002; Matsumura, Garnier, et al., 2002; Applebee, Langer, Lystrand, & Gamoran, 2003;

Stazesky, 2004; Mant, Wilson, & Coates, 2007), incorporates a practice of analytical questioning to elicit higher-order thinking (Hattie, 1992; Applebee et al., 2003; Stazesky, 2004; Mant et al., 2007), and focuses on metacognitive skill building (Haller, Child, & Walberg, 1988) and supports student achievement.

Finally, the *monitoring student learning* construct measures general teacher practice that impacts learning. First, it depicts how teachers use observations about student learning to make instructional adjustments (Bulterman-Bos, Verloop, Terwel, & Wardekker, 2003; Pijl, 1992; Sanders, 1989). Second, this construct addresses how teachers use formative and summative assessments as opportunities to provide students with feedback (Hattie, 1992; Marazano et al., 2001; Matsumura, Patthey, et al., 2002).

History Teacher Assignment Rubric

The following section depicts the qualities of the History Assignment rubric's 11 dimensions (see Appendix B for complete rubric). All rubric dimensions were scored on 4-point scales; 1 was the lowest score point and 4 was the highest score point.

Reading Opportunities. The purpose of this dimension is to evaluate the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to read history texts. Qualities of reading opportunities include: the role of reading, duration of reading, and text variety (e.g., essays, arguments, and primary source documents such as letters, newspapers, and comic strips).

This dimension was considered evidence in three domains: *Centrality*, *Time-on-Task*, and *Text Variety*. *Centrality*, the most heavily weighted criterion, considers how central reading is to the overall assignment. This is determined by evaluating how the reading task related to other aspects of the assignment, whether or not reading was necessary to complete the assignment, and how well the text(s) related to the standards, knowledge, and/or skills targeted by the assignment. *Time-on-Task* considers whether an appropriate amount of time was set aside for the reading task (e.g., with opportunities for recursive readings of shorter, easier texts and/or in-depth reading of longer, more difficult texts). *Text variety* considers the types of texts the teacher provided for the students. Assignments could still receive a score point of 4 if only one history text was used, but the other criteria were met.

Reading Comprehension Strategies. The purpose of this dimension is to describe the degree to which the teacher provided students with the opportunity to utilize various strategies to assist in their comprehension of history reading. These reading comprehension strategies include: generating questions, previewing text organization, and using reading

logs. Raters paid particular attention to evidence of teachers utilizing RA-specific reading comprehension strategies.

This dimension was scored using four criteria: The quality and extent of *Description*, *Time-on-Task*, *Purposefulness*, and *Accountability*. *Description* considers whether or not the teacher explicitly calls attention to strategies used during the assignment in addition to how clearly the teacher describes the strategies. If the teacher made no mention of them in the coversheet but there was evidence of their use in the samples of student work, assignments still received some credit for reading comprehension strategies. *Time-on-Task* considers the degree to which sufficient time was set aside for students to use these strategies. *Purposefulness* considers to what extent specific strategies were tailored to specific texts and/or reading tasks. Finally, *Accountability* considers whether or not students were held accountable for utilizing strategies (e.g., in one assignment students had to submit their text annotations and the teacher provided them with feedback).

Metacognitive Processes. The purpose of this dimension is to evaluate the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to utilize various metacognitive thinking skills, made evident through student annotations of text, metacognitive reading logs, and teacher instructions to students to think aloud or to discuss thinking and problem solving processes.

This dimension was scored using three criteria related to executive control: *Identifying Confusions*, *Self-Evaluation*, and *Making Adjustments*. *Identifying Confusions* considers whether students had the opportunity to identify challenging material while engaging with text (e.g., identifying unknown vocabulary, confusing history concepts, etc.). *Self-Evaluation* considers whether students were required to assess their understanding of history text as a formal part of the assignment. *Making Adjustments* considers the degree to which students made specific changes to their approach to a history reading task.

Disciplinary Reading. This dimension considers the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to utilize Disciplinary Reading processes such as comparing and contrasting texts—including maps, graphs, history symbols, as well as written text, evaluating the sources of a documents, identifying the perspectives or points of view taken, and placing primary source documents into historical context.

This dimension was scored using two criteria: *Frequency* and *Depth*. *Frequency* considers how many types of Disciplinary Reading opportunities the assignment provided, while *Depth* considers whether these opportunities were substantial or cursory.

Collaborative Meaning Making. The purpose of this dimension is to describe the degree to which the teacher used the assignment as a vehicle to provide students with the opportunity to participate in discussions about history texts. This dimension also considers the opportunity teachers provided students to read in small or paired grouping configurations.

It was scored using four criteria: *Purpose*, *Routine*, *Accountability*, and *Connection*. *Purpose* considers whether there were clear objectives for the collaboration and if these were communicated to the students. *Routine* considers how formal the collaboration was (i.e., collaboration was required of all students, teacher communicates explicit directions about how to collaborate, students provided with graphic organizers to guide work, etc.). *Accountability* considers if students were held accountable for work completed during the collaboration collectively and/or individually. *Connection* considers the degree to which the collaborative task supports the next step(s) in the overall assignment.

Teacher Instruction: Support for Reading Engagement. The purpose of this dimension is to evaluate the degree to which a teacher supports students in their successful completion of the reading task. Specifically, this dimension considers literacy support activities such as whether the teacher models (i.e., demonstrates an aspect of the reading process), provides explicit instruction (i.e., articulates the various steps and/or processes students required of the reading task), provides resources (e.g., consumable texts, graphic organizers), and/or establishes literacy routines (i.e., puts in place ongoing and specific reading process practices). Teacher support for reading engagement may focus on any aspect of the reading process (e.g., reading logs, focused conversations, reading comprehension strategies, metacognitive activities, etc.).

This dimension was scored using two criteria: *Frequency* and *Depth*. *Frequency* considers how many types of support the teacher provided, while *Depth* considers whether these supports were substantial or cursory.

Teacher Instruction: Accommodations for Reading. The purpose of this dimension is to describe the degree to which a teacher tailored the assignment to meet the various reading needs of his/her students. Specifically, this dimension considers whether the teacher differentiated instruction though accommodations such as: providing various texts for students to read at different reading levels; providing extra support for struggling readers and English Learners (e.g., by modifying instruction, giving help outside of class, and adapting the assignment content); allowing students to work at their own pace; and paring struggling reading with stronger readers.

Rubric. This dimension was scored using two criteria: *Frequency* and *Clarity*. *Frequency* considers how many types of accommodations the teacher provided and *Clarity* considers the degree of specificity that teachers described accommodations.

Cognitive Challenge. The purpose of this dimension is to describe the degree to which teachers required students to apply complex cognitive skills when engaging with history content and concepts in this assignment. The dimension also considers the level of critical thinking teachers required of the students in order to complete the assignment (e.g., problem solving, analyzing, and synthesizing information). Specifically, this dimension considers the opportunity teachers provided students to construct or transform knowledge as opposed to simply recalling, describing, or identifying basic information.

This dimension was scored using Bloom's Taxonomy as a guide (Bloom, 1956). High-scoring assignments significantly utilized higher-order thinking skills by engaging students in reasoning processes such as analysis, synthesis, and/or evaluation of historical concepts in order to complete the assignment. These higher-order thinking processes are the means by which deep content understanding is acquired. At the other end of the spectrum, low-scoring assignments engaged students in basic comprehension skills such knowledge recall, definition, and/or labeling of historical concepts in order to complete the assignment. These lower-level thinking processes are the means by which surface content understanding is acquired.

Teacher Instruction: Support for Cognitive Challenge. The purpose of this dimension is to describe the degree and quality of support a teacher provides for the assignment's cognitive challenge. Specifically, this dimension considers the degree of support for the thinking skills (e.g., knowledge, comprehension, application, analysis, synthesis, and/or evaluation) and processes that are provided by the teacher for successful completion of the assignment. An assignment given a high score on this dimension had to demonstrate that the teacher provided support that was focused on the cognitive task students were to carry out. Additionally, the assignment most likely had a high percentage of students performing at an adequate level or above.

This dimension was scored using four criteria: *Thinking Processes*, *Structure*, *Peer/Expert Knowledge*, and *Resources*. *Thinking Processes* considers whether the teacher explicitly taught the thinking processes necessary to meet the cognitive challenge of the assignment (e.g., through modeling, class discussion, etc.). *Structure* considers the degree to which the cognitive task was broken down into clear and explicit steps. *Peer/Expert Knowledge* considers whether the teacher enabled students to draw on peer or expert

knowledge during the assignment. Finally, *Resources* considers whether the teacher made materials available to students that would aid in meeting the assignment's cognitive challenge (i.e., samples of student work with critical thinking processes made explicit).

Monitoring: Adjusting Instruction. The purpose of this dimension is to capture the degree to which the teacher adjusts instruction based on monitoring student progress. Specifically, this dimension considers whether the teacher made curricular, instructional, or lesson adjustments for the immediate benefit of the current students.

This dimension was scored using two criteria: *Specificity* and *Student Benefit*. *Specificity* considers how clearly the teacher articulated the adjustment made. *Student Benefit* considers which students will benefit from the adjustment (i.e., the current class or future classes) and how quickly the adjustment is implemented (i.e., during the execution of the assignment, some unknown time in the future, etc.). Teachers who wrote about monitoring students but made no adjustments received low scores for this dimension.

Assessment: Student Feedback. The purpose of this dimension is to capture the degree to which the teacher provides students with feedback. Specifically, this dimension considers whether teachers provided feedback to positively impact student performance.

This dimension was scored based on the specificity of the feedback. Teachers who gave students specific feedback that had the potential to improve student performance during the current assignment or in the future received higher scores. Teachers who gave unclear feedback or only assigned student work a number grade received lower scores. All feedback was considered whether verbal or written, during the assignment or after the assignment.

Field Test Methodology

Sample

The study targeted high schools in 55 California school districts historically serving low-performing student populations: There are currently 47 districts actively participating in the study. By focusing on low-performing students, this study will ultimately determine whether RA can address the pervasive achievement gap between mainstream and minority populations (Gee, 1999; Jencks & Phillips, 1998; Snow, Burns, & Griffin, 1998). Schools served as the unit of randomization and were matched prior to randomization using five factors:

(1) African-American enrollment,

(2) English Learner enrollment,

(3) Latino enrollment,

(4) socio-demographic profile, and

(5) academic performance (independent of socio-demographic characteristics).

WestEd identified two history and two biology teachers from each participating school and then randomly assigned the schools to treatment and control conditions. In order to control for teacher experience, all participating teachers are credentialed and have taught for at least 3 years.

Data collection began during the 2007–2008 school year with a cohort of history teachers (see Table 1). A cohort of biology teachers and a second cohort of history teachers are currently in their data collection year. This report reflects preliminary results from History Cohort 1 only. History Cohort 2 teacher assignment data will be added to the current data set to allow for further analysis.

Table 1

Data collection schedule

Subject	Initial training workshop	Practice and follow-up training year	Data collection year
History Cohort 1	Summer 2006	2006–2007	2007–2008
History Cohort 2	Summer 2007	2007–2008	2008–2009
Biology	Summer 2007	2007–2008	2008–2009

WestEd originally recruited 86 history teachers and randomly assigned them to treatment and control. However, there are currently 48 teachers remaining in the study from History Cohort 1. The drop in participation was due primarily to a range of external factors including subject reassignment and teachers leaving the profession. Several teachers did report the time commitment was too great, while four teachers provided no explanation. Of the 48 remaining teachers, 21 control and 16 treatment teachers returned at least one teacher assignment. In total, we received 36 Immigration, Industrialization, and Urbanization assignments (19 control and 17 treatment) and 36 World War II assignments (20 control and 16 treatment).

Scoring Protocol

Two CRESST associate researchers and one UCLA History Ph.D. candidate scored the teacher assignments. These expert raters had used a similar rubric to score over 100 biology assignments in 2007. The CRESST researchers began scoring history assignments in January 2008. They began by first reviewing the rubric and discussing the criteria for each dimension.

The raters then scored five assignments independently using score sheets that provide space for one numeric score and comments per dimension. These independently scored assignments served as the basis for discussing strategies for scoring each dimension (e.g., which aspects of the coversheet or submitted student work were proving to be most helpful in scoring a given dimension) and allowed the raters to establish final calibrated scores for all dimensions. The raters repeated this process when the third rater began scoring in April 2008.

Once scoring was underway, raters discussed one-point discrepancies and then came to consensus on final score points. Raters relied heavily on the comments recorded in the score sheets to provide evidence for determining final scores. Additionally, they reviewed sections of the assignments during these discussions. At least two expert raters scored each of the assignments. A third rater resolved discrepancies greater than one score point. This rating process did not include averaging rater scores. Raters were either in exact agreement or negotiated a final score. The purpose of this process is to support high reliability by developing expert raters.

Results

This section provides a statistical summary of two central goals of the Teacher Assignment instrument development, namely that the products of our work would be measures that could be easily and consistently scored by raters with moderate content knowledge, and that these measures would be sensitive to the curricular intervention.

Rater Reliability

The Intra-class Correlation (ICC) was computed to measure inter-rater reliability of all rubric dimensions. The ICC is a measure of the variability within raters as a proportion (reported in decimal form, from zero to one) of the total variation across all ratings and all subjects (Shrout & Fleiss, 1979). In the case of perfect agreement, 100% of the variation is accounted for within raters, and the ICC equals 1. As seen in Table 2, for all dimensions, the average inter-rater reliability was outstanding (> 0.8), or substantial (0.6 to 0.79; see Landis & Koch, 1977).

Table 2

Inter-rater Reliabilities

Rubric Dimension	Immigration, Industrialization, Urbanization	World War II
Reading Opportunities	0.77	0.61
Reading Comprehension Strategies	0.91	0.90
Metacognitive Processes	0.88	0.97
Disciplinary Reading	0.93	0.86
Collaborative Meaning Making	0.85	0.89
Teacher Instruction: Support For Reading Engagement	0.87	0.91
Teacher Instruction: Accommodations For Reading	0.94	0.97
Cognitive challenge	0.72	0.75
Teacher Instruction: Support For Cognitive Challenge	0.76	0.78
Monitoring: Adjusting Instruction	0.82	0.90
Monitoring: Student Feedback	0.87	0.84

In a simple intent-to-treat comparison of treatment and control (averaging teacher scores over the two assignments), treatment teachers significantly outscored control teachers on six dimensions: (a) reading opportunities; (b) reading comprehension strategies; (c) metacognitive processes; (d) collaborative meaning making; (e) teacher instruction: support for reading engagement; and (f) student feedback ($p < .05$). If, instead of averaging the scores across the two assignments, we examined the two assignments independently, the findings were highly consistent. Differences appeared in most cases on the same dimensions for both assignments, with similar magnitude. The two notable exceptions were on the Disciplinary Reading construct, for which the observed difference was only significant on the second assignment and the Monitoring: Student Feedback construct, for which the findings were not statistically significant in the smaller samples.

As seen in Table 3, overall, the highest treatment assignment mean scores were for the reading opportunities (3.69), support for reading engagement (3.56), and reading comprehension strategies (3.38) dimensions. The highest control assignment mean scores were for reading opportunities (3.05), support for cognitive challenge (2.95), and cognitive challenge (2.76). The reading opportunities scores were high because nearly all teachers followed the data collection requirements and submitted assignments with at least one reading opportunity.

On the other end of the spectrum, the lowest treatment assignment mean scores were for adjusting instruction (1.59), accommodations for reading (1.91), and Disciplinary Reading (2.47). Among controls, scores were lowest for metacognitive processes (1.26), collaborative meaning making (1.52), and accommodations for reading (1.60). Low scores for reading accommodations suggest that history teachers without RA training are unlikely to differentiate instruction according to differences in student reading skills.

Table 3

Means and Standard Deviation of Teacher Assignment Scores by Treatment Status

Rubric Dimension	Type of Teachers	*N*	Mean	Std. Deviation	Std. Error Mean
Reading Opportunities*	Control	21	3.05	0.63	0.14
	Treatment	16	3.69	0.36	0.09
Reading Comprehension Strategies*	Control	21	1.88	0.67	0.15
	Treatment	16	3.38	0.70	0.17
Metacognitive Processes*	Control	21	1.26	0.44	0.10
	Treatment	16	2.66	0.91	0.23
Disciplinary Reading	Control	21	1.93	0.64	0.14
	Treatment	16	2.47	1.18	0.29
Collaborative Meaning Making*	Control	21	1.52	0.64	0.14
	Treatment	16	2.59	1.00	0.25
Teacher Instruction: Support For Reading Engagement*	Control	21	2.00	0.74	0.16
	Treatment	16	3.56	0.70	0.18
Teacher Instruction: Accommodations For Reading	Control	21	1.60	0.74	0.16
	Treatment	16	1.91	0.99	0.25
Cognitive Challenge	Control	21	2.76	0.58	0.13
	Treatment	16	2.72	0.98	0.25
Teacher Instruction: Support For Cognitive Challenge	Control	21	2.95	0.52	0.11
	Treatment	16	2.56	0.79	0.20
Monitoring: Adjusting Instruction	Control	21	1.69	0.94	0.21
	Treatment	16	1.59	0.80	0.20
Monitoring: Student Feedback*	Control	21	2.40	0.68	0.15
	Treatment	16	2.94	0.87	0.22

Note. *$p < .05$ for independent samples *t*-test.

Conclusion

Utilizing teacher assignments has proven to be a successful method of measuring teacher practice as demonstrated by the high inter-rater reliability of all 11 rubric dimensions and sensitivity to instruction demonstrated by the observed differences between treatment and control classrooms. Whereas earlier versions of teacher assignment rubrics focused on evaluating the general quality of instruction, this adapted rubric detected specific elements of a professional development program.

History Cohort 1 treatment teachers significantly outscored control teachers on six dimensions (reading opportunities; reading comprehension strategies; metacognitive processes; collaborative meaning making; teacher instruction: support for reading engagement; and monitoring student feedback) that are critical to RA implementation. Overall, there is strong evidence demonstrating that teachers who participated in professional development program are incorporating RA aspects into their teaching practices. The high inter-rater reliability combined with the significant differences between study groups suggests the new instrument can successfully detect the impact of a specific professional development program on teacher practice.

Evidence from CRESST's ongoing work with a second cohort of history teachers, as well as a parallel study of biology teachers, will be completed later in 2009, and should hold further clues about the robustness and generalizability of these findings. Early indications from this work are positive, and will be detailed in a forthcoming technical report related to the student outcomes measures and the relationship between teacher instruction and student achievement.

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Appendix A:
Teacher Assignment Coversheet

Teacher Assignment Collection

In-class Assignment

History

Immigration, Industrialization, and Urbanization

Teacher ID	
Teacher Name	
School Name	
Type of U.S. History Class	
Student Grade Span	
Period	
Date of This Assignment	

CRESST

National Center for Research on Evaluation, Standards, and Student Testing

ASSIGNMENT COVER SHEET: HISTORY
IMMIGRATION, INDUSTRIALIZATIN, AND URBANIZATION

1. Content Standards

Which Content Standards in U.S. History were you targeting for this assignment?
Please list standards below.

2. Assignment Description

a. Describe the assignment in detail.
What were students asked to do?
Please attach a copy of the assignment directions you distributed to students.
Please attach copies of any supporting materials you distributed to students (teacher notes, handouts, etc.).

b. How long was the class period in which students worked on this assignment? _____

If the assignment was completed in class, how many minutes did students take to complete it? _____

If the assignment was not completed by the end of the class, what percentage of the assignment was done in class and what percentage was done at home? In class: _____ At home: _____

c. Approximately how many assignments like this do you give per year? _____

d. What percentage of the assignment was completed individually? _____

e. What percentage was completed in pairs? _____ In groups? _____

f. Did students participate in a small group and/or whole class discussion? ☐ small group ☐ whole class

g. If students worked together on any part of this assignment, for example with partners, in small groups, or with the whole class, *please describe the nature of their collaboration.*

3. Reading Material Information

a. What kinds of reading material did you use for this assignment (e.g., textbook, article, graphs, maps, photographs or other primary source documents, etc). Please indicate the ***text type, source, title, author, number of pages and reading level*** of any material students read as part of this in-class assignment. To indicate the reading level of the material, please write whether you felt the text was ***below***, ***at***, or ***above*** your students' grade level.

Please include an appropriate sample section from the text.

Text Type	Sources	Text Title	Authors/Publishers	# of Pages Assigned	Reading Level

b. Explain why you chose this reading material for this assignment.

c. If students engaged in any intertextual readings for this assignment (i.e., comparing views and information from different text sources) please describe this below.

4. Learning Routines and Tools

Please list and describe any literacy routines, reasoning processes, and comprehension strategies that were used during this assignment. If any learning tools, such as logs, notes, or graphic organizers were used as part of this assignment, please attach a copy.

5. Metacognitive Processes

Describe in detail any metacognitive processes students engaged in for this assignment (e.g., annotating in text margins, thinking aloud, completing metacognitive reading logs, and discussion focusing on students' thinking and problem-solving processes).

6. Description of Instructional Strategies

a. Describe in detail the instructional strategies you used for the history and literacy components of this assignment (e.g., modeling, explicit instruction, presentations, discussion opportunities, detailed sequences of work, etc.).

b. If you did anything specific to support collaboration and/or student engagement during this assignment, please describe this below.

c. Describe why you chose these particular instructional strategies for this assignment. How were these instructional strategies and methods intended to help your students accomplish the history and literacy goals of this assignment?

d. What is the percentage of ELLs in your classroom? _____

e. What is the percentage of struggling readers in your classroom? _____

If you differentiated instruction for students such as ELL and struggling readers, please provide a detailed description below.

7. Monitoring and Assessment

a. How would you rate the challenge level of this assignment for the majority of your students?

_____ High Challenge _____ Medium Challenge _____ Low Challenge

b. What proportion of your class struggled during the assignment? _____ %

c. How did you monitor student performance during the assignment? Please describe.

d. If you made any changes to your curriculum, instruction, or lesson plan based on monitoring student performance,
please describe below.

e. Did you provide feedback to your students during and/or after the assignment? Please describe.

f. Approximately what percentage of the students in your class performed at the following levels by the end of this assignment?

_____% = Good to Excellent _____% = Adequate _____% = Not Yet Adequate

Appendix B:
Teacher Assignment Coversheet

READING OPPORTUNITIES

The purpose of this dimension is to evaluate the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to read. Qualities of reading opportunities include: the role of reading, duration of reading, and text variety (e.g., essays, arguments, and primary documents such as letters, newspapers, and comic strips). Evidence for this dimension can be found throughout the coversheet, particularly in response to questions 2a, 2b, 3a and 3b.

4 The teacher provides ***substantial*** opportunities for meaningful reading experiences as demonstrated by:

- The role of history reading is central to the assignment with little apparent boundary between reading and other tasks. Reading is necessary for completing the assignment. The text(s) is clearly related to the standards, knowledge, and/or skills targeted by the assignment.
- Significant time is set aside for reading history texts with opportunities for recursive readings of shorter/easier texts and/or in-depth reading of longer/more difficult texts.
- A variety of texts may used.

3 The teacher provided ***adequate*** opportunities for reading as demonstrated by:

- The role of history reading is supportive to the assignment overall (e.g. students read during the input phase and then move on to a hands-on task for the remainder of the assignment). Reading is necessary for completing the assignment. The text(s) is mostly related to the standards, knowledge, and/or skills targeted by the assignment.
- Adequate time is set aside for reading history texts.
- A variety of texts may used.

2 The teacher provided ***minimal*** opportunities for reading as demonstrated by:

- The role of history reading is supplemental to the assignment overall (e.g. the reading task is an add-on). Reading is not necessary for completing the assignment. The text(s) is somewhat related to the standards, knowledge, and/or skills targeted by the assignment.
- Time allotted for reading may be brief or allow for only superficial reading.
- There is likely little text variety.

1 The teacher provided ***no*** opportunities for reading as part of this assignment and/or there is ***not enough evidence*** to make a judgment.

READING COMPREHENSION STRATEGIES

The purpose of this dimension is to describe the degree to which the teacher provided students with the opportunity to utilize various comprehension strategies to assist in their comprehension of history reading. These reading comprehension strategies include: generating questions, previewing text organization, and using reading logs. Evidence for this dimension can be found throughout the coversheet, particularly in response to question 4.

4 The teacher provided students with ***substantial*** opportunities to utilize reading comprehension strategies as demonstrated by:

- Teacher described the role of the reading comprehension strategies in the cover sheet (e.g., teacher considers this to be a formal part of the assignment).
- Teacher allocated sufficient time during the assignment for students to use various reading comprehension strategies.
- Reading strategies are targeted and purposeful (i.e., teacher tailored the reading strategies for the specific texts used in the assignment).
- Teacher held students accountable for using reading comprehension strategies (e.g., reviewed reading logs, circulated while students talk-to-the-text, etc.).

3 The teacher provided students with ***adequate*** opportunities to utilize reading comprehension strategies as evidence by:

- Teacher made mention of reading comprehension strategies in the cover sheet.
- Teacher allocated sufficient time during the assignment for students to use various reading comprehension strategies.
- Reading strategies may be general and/or part of an ongoing reading routine (e.g., pair share, use reading logs).

2 The teacher provided ***few*** opportunities for students to utilize reading comprehension strategies as demonstrated by:

- Teacher may not have mentioned reading strategies in the coversheet, but there is evidence of their use in sample of student work.
- Teacher allocated limited time during the assignment for students to use reading comprehension strategies.
- Types of reading strategies used may be vague.

1 The teacher ***did not*** provide opportunities for students to utilize reading comprehension strategies in the context of this assignment or there was not enough evidence to make a judgment.

METACOGNITIVE PROCESSES

The purpose of this dimension is to evaluate the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to utilize various metacognitive processes such as annotating in text margins, thinking aloud, completing metacognitive reading logs, and conversation focused on students' thinking and problem solving processes. Evidence for this dimension can be found throughout the coversheet, particularly in response to questions 5, 6a, and samples of student work.

4 The teacher provided students with **significant opportunities** within the context of this assignment to utilize metacognitive processes as demonstrated by:

- Students identified confusions and/or new understandings (e.g., talking-to-the-text).
- Students are required to reflect and self-evaluate their comprehension levels (e.g., group conversations, reading journals, etc.).
- Students made individualized adjustments based on their self-evaluations (e.g., review difficult passage with a peer, use an additional reading strategy, etc.) and/or teacher provided opportunities for students to make adjustments (e.g., teacher provides students with additional internet resources and/or encyclopedia to clarify confusions in existing text set).

3 The teacher provided students with **adequate opportunities** within the context of this assignment to utilize metacognitive processes as demonstrated by:

- Students identified confusions and/or new understandings.
- Students reflected and self-evaluated their comprehension levels, but this step may not be formally structured (e.g., could be evidence in student work only and not in assignment cover sheet).

2 The teacher provided students with **minimal opportunities** within the context of this assignment to utilize metacognitive processes as demonstrated by:

- Students identified confusions and/or new understandings, but process for doing so may not be formally structured.

1 The teacher **did not** provide students any opportunities within the context of this assignment to utilize metacognitive processes or there was not enough evidence to make a judgment (e.g., teacher writes that there was a class discussion but provides no additional details articulating how this discussion was metacognitive in nature).

DISCIPLINARY READING

This dimension considers the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to utilize Disciplinary Reading processes such as conducting intertextual readings (e.g., comparing and contrasting texts—including maps, graphs, history symbols, as well as written text), analysis of text/discourse structures in history texts (e.g., reading headings and subheadings to determine text organization), evaluating the source of a document, identifying the perspective or point of view taken, and placing the primary source document into a historical context (contextualizing). Evidence for this dimension can be found throughout the coversheet, particularly in response to questions 2a and 3c.

4 Within the context of this assignment, the teacher provided students with ***significant opportunities*** to utilize Disciplinary Reading processes. These opportunities include at least two of the following activities conducted as a significant aspect of the assignment or three of the activities conducted in a more limited manner.*

- evaluating the source of a text
- identifying the perspective or point of view of a text
- conducting intertextual readings (e.g., comparing information presented in texts of the same subject matter)
- placing a primary source document into a historical context
- analyzing and interpreting cause and effect

and/or

- understanding the text in relation to the major debates among historians.

3 Within the context of this assignment, the teacher provided students with ***adequate opportunities*** to utilize Disciplinary Reading processes. These opportunities include at least one of the activities above conducted as a significant aspect of the assignment or two of the activities conducted in a more limited manner.

2 The teacher provided students with ***minimal opportunities*** to utilize Disciplinary Reading processes as part of this assignment. The teacher may have asked students to participate in one of the above mentioned activities in a limited manner (e.g., not as a significant aspect of the assignment).

1 The teacher ***did not*** have provided students with any opportunities to utilize Disciplinary Reading processes as part of this assignment or there was not enough evidence to make a judgment.

* an assignment requiring students to consider the text in relation to the major debates among historians automatically receives a 4.

COLLABORATIVE MEANING MAKING (DISCUSSION OPPORTUNITIES)

The purpose of this dimension is to describe the degree to which the teacher used this assignment as a vehicle to provide students with the opportunity to participate in discussions with peers focused on history texts. This dimension also considers the opportunity teachers provided students to read in small or paired grouping configurations. Evidence for this dimension can be found throughout the coversheet, particularly in response to questions 2d, 2e, 2f, 2g, and 6b.

4 The teacher used this assignment as a vehicle to provide students with ***significant opportunities*** to participate in discussions with peers focused on history texts as demonstrated by:

- The collaborative work is well-structured (i.e., the teacher communicates a clear purpose to students).
- A strong routine is in place to support the collaboration (e.g., collaboration was a required part of assignment, the teacher communicates explicit directions to students, may provide groups with graphic organizers, etc.).
- There is accountability for the collaborative meaning making at the individual level (e.g., each student is responsible for documenting, presenting, etc. some aspect of the collaborative work).
- The collaborative work is directly and strongly connected to the next step in the overall assignment.

3 The teacher used this assignment as a vehicle to provide students with ***adequate opportunities*** to participate in discussions with peers focused on history texts as demonstrated by:

- The collaborative work is adequately structured (i.e., there is a clear purpose for the collaboration, but unclear whether or not teacher communicates this to students).
- An adequate routine is in place to support the collaboration (e.g., collaboration was a required part of assignment, teacher instructions are mostly clear).
- There is accountability for the collaborative meaning making at the group level (e.g., groups are responsible for sharing out, using group conclusions for the next part of the assignment, etc.).
- The collaborative work somewhat connects to the next step in the assignment.

2 The teacher provided students with ***minimal opportunities*** to participate in discussions with peers focused on history texts. The collaboration was a required part of the assignment, but lacked structure and may not have been supported by a routine.

1 The teacher provided students with ***no required opportunities*** to participate in discussions with peers focused on history texts. If collaborative meaning making did occur, it was suggested as optional and/or was student-driven (e.g., students were allowed to help each other if they wanted to with little or no direction from the teacher).

TEACHER INSTRUCTION: SUPPORT FOR READING ENGAGEMENT

The purpose of this dimension is to evaluate the degree to which a teacher supports students in their successful completion of the reading task. Specifically, this dimension considers literacy support activities such as whether the teacher ***models*** (i.e., demonstrates an aspect of the reading process), ***provides explicit instruction*** (i.e., articulates the various steps and/or processes students required of the reading task), ***provides resources*** (e.g., consumable texts, graphic organizers), and/or ***establishes literacy routines*** (i.e., puts in place ongoing and specific reading process practices). Teacher support for reading engagement may focus on any aspect of the reading process (e.g., reading logs, focused conversations, reading comprehension strategies, metacognitive activities, etc.). Evidence for this dimension can be found throughout the coversheet, particularly in response to questions 4, 5, 6a, 6b, and 6c.

4 Teachers ***significantly supported*** students in the reading task through **previous or current** teaching approaches. This support includes at least two of the following support types in a significant way or three of the following support types in a more limited manner.

- Teacher modeled a specific part or parts of the reading process.
- Teacher provided explicit instruction around the reading task and/or process.
- Teacher provided resources to support reading task.
- Teacher established clear literacy routines.

Additionally, the reading task is well-structured (e.g., broken down into a series of steps and well-scaffolded).

3 Teachers ***adequately supported*** students in the reading task. This support includes at least one of the following support types in a significant way or two of the following support types in a more limited manner.

- Teacher modeled a part or parts of the reading process.
- Teacher provided explicit instruction around the reading task and/or process.
- Teacher provided resources to support reading task.
- Teacher established literacy routines.

Additionally, the reading task is mostly well-structured (e.g., structure is sound overall, but some elements may be unclear).

2 Teachers ***somewhat supported*** students in the reading task.

- The teacher incorporated one type of support in a limited manner.
- The reading task was not appropriately structured and/or was unclear.

1 Teachers ***did not support*** students in the reading task or evidence was too vague to make a judgment. The reading task was not structured.

TEACHER INSTRUCTION: ACCOMMODATIONS FOR READING

The purpose of this dimension is to describe the degree to which a teacher tailored the assignment to meet the various reading needs of his/her students. Specifically, this dimension considers whether the teacher differentiated instruction though accommodations such as: ***providing various texts*** for students to read at different reading levels; ***providing extra support*** for struggling readers and ELs, e.g., by modifying instruction, giving help outside of class and adapting the assignment content; ***allowing students to work at their own pace***; and ***paring struggling reading with stronger readers***. Evidence for this dimension can be found throughout the coversheet, especially in response to questions 3a, 3b, and 6d.

4 The teacher ***significantly*** tailored the assignment to meet the various reading needs of his/her students. Specifically, the teacher differentiated instruction using at least two of the following methods and described the accommodation with clarity and specificity:

- providing various texts for students to read at different reading levels
- providing extra teacher support for struggling readers and ELs, (e.g., by modifying instruction, giving help outside of class, adapting the assignment content)
- allowing students to work at their own pace
- pairing struggling readers with stronger readers

3 The teacher ***adequately*** tailored the assignment to meet the various reading needs of his/her students. Specifically, the teacher provided some differentiated instruction using at least one of the following methods and described the accommodation in a mostly clear and specific manner:

- providing various texts for students to read at different reading levels
- providing extra teacher support for struggling readers and ELs, (e.g., by modifying instruction, giving help outside of class, adapting the assignment content)
- allowing students to work at their own pace
- pairing struggling readers with stronger readers

2 The teacher ***minimally*** tailored the assignment to meet the various reading needs of his/her students. Specifically, the teacher provided some differentiated instruction using at least one of the methods mentioned above, but described the accommodation with insufficient clarity and specificity.

1 The teacher ***did not*** tailor the assignment to meet the various reading needs of his/her students.

COGNITIVE CHALLENGE

The purpose of this dimension is to describe the degree to which teachers required students to apply complex cognitive skills when engaging with history concepts in this assignment. The dimension also considers the level of critical thinking teachers required of the students in order to complete the assignment (e.g., critical thinking, problem solving, analyzing, and synthesizing information). Specifically, this dimension considers the opportunity teachers provided students to construct or transform knowledge as opposed to simply recalling, describing, or identifying basic information. Evidence for this dimension can be found throughout the coversheet, especially in response to question 2a, the assignment instructions given to students (if included), and samples of student work.

4 The teacher required students to ***significantly utilize*** higher-order thinking skills by engaging in reasoning processes such as analysis, synthesis, and/or evaluation of historical concepts in order to complete the assignment. The higher-order thinking processes are the means by which ***deep content understanding*** is acquired.

3 The teacher required students to ***utilize some*** higher-order thinking skills by engaging in reasoning processes such as the application and/or analysis of historical concepts in order to complete the assignment. These thinking processes are the means by which ***adequate content understanding*** is acquired.

2 The teacher required students to utilize ***basic comprehension*** skills such as the explanation, description, and/or identification of historical concepts in order to complete the assignment. The lower-level thinking processes are the means by which ***surface content understanding*** is acquired.

1 The teacher required students to utilize only ***basic knowledge and lower-level thinking skills*** such as knowledge recall, definition, labeling, and/or listing of historical concepts in order to complete the assignment. The lower-level thinking processes are the means by which only ***minimal content understanding*** is acquired.

TEACHER INSTRUCTION: SUPPORT FOR COGNITIVE CHALLENGE

The purpose of this dimension is to describe the degree and quality of support a teacher provides for the assignment's cognitive challenge. Specifically, this dimension considers the degree of support for the thinking skills (e.g., knowledge, comprehension, application, analysis, synthesis, and/or evaluation) and processes that are provided by the teacher for successful completion of the assignment. An assignment given a high score on this dimension had to have provided support that was focused on the cognitive task students were to carry out; additionally, it will most likely have a high percentage of students performing at an adequate level or above. Evidence for support will be provided by the student samples and the description in the cover sheet, primarily in the "Description of Instructional Strategies" (section 6) but may also be found in any other section of the cover sheet (esp. 7a and 7d).

4

Students are *well supported* in meeting the cognitive challenge of the assignment through **previous or current** teaching approaches such as:

- Teaching of thinking processes (e.g., modeling, class discussions).
- Structuring of the cognitive activity into an appropriate number of explicit steps (e.g., exposure to, application of, and analysis of concepts).
- Enabling students to draw on peer or expert knowledge to work through history content (e.g., pair or group discussion).
- Making resources available and reviewing them with students to aid in meeting the cognitive challenge of the assignment (e.g., samples of student work with critical thinking processes made explicit).

3

Students are *adequately supported* in meeting the cognitive challenge of the assignment.

- The teacher provides—or may have previously provided—students with **adequate** support for facilitating the necessary thinking skills.
- The activity is fairly well structured into explicit steps.
- Students may also be provided with the opportunity to draw on peer knowledge (e.g., pair or group discussion).
- Resources may be provided to aid in meeting the cognitive challenge of the assignment, but are not necessarily reviewed as a class (e.g., samples of thinking processes in student work are provided to students; students are expected to take the initiative to use the samples of student work without direction from the teacher).

2

Students are *somewhat supported* in meeting the cognitive challenge of the assignment.

- The teacher may provide – or may have previously provided – **minimal** support for facilitating thinking skills.
- The activity may not be well structured into explicit steps.
- Teacher mentions making resources available, but it is unclear what the resources were and/or how they were to be used.

1

Students are generally *not supported* in meeting the cognitive challenge of the assignment.

- The teacher either does not provide students with any information on thinking processes through previous or current teaching approaches, does not incorporate time into the assignment for their use, or both.
- The activity is not structured into explicit steps.
- No resources were provided to aid in meeting the cognitive challenge of the assignment.

MONITORING: ADJUSTING INSTRUCTION

The purpose of this dimension is to capture the degree to which the teacher adjusts instruction based on monitoring student progress. Specifically, this dimension considers whether the teacher made curricular, instructional, or lesson adjustments for the immediate benefit of the current students. Evidence for this dimension can be found throughout the coversheet, especially in response to questions 7b, 7c and 7d.

4 The teacher monitors student progress and makes ***specific*** adjustments to instruction for the ***immediate benefit*** of current students (i.e., the teacher adjusts instruction during the course of the assignment).

3 The teacher monitors student progress and makes ***general*** adjustments to instruction for the benefit of current students, but may not make adjustments immediately (e.g., teacher may implement changes after the assignment has been completed).

2 The teacher monitors student progress and instructional adjustments are ***unclear*** and/or adjustments are intended for future students (e.g., teacher describes lesson plan adjustments to be made next school year).

1 The teacher ***does not*** use the assignment as an opportunity to monitor student progress for the purpose of adjusting instruction.

ASSESSMENT: STUDENT FEEDBACK

The purpose of this dimension is to capture the degree to which the teacher provides students with feedback. Specifically, this dimension considers whether teachers provided feedback to positively impact student performance. Evidence for this dimension can be found throughout the coversheet, especially in response to questions 7b, 7c and 7e, and samples of student work.

4 The teacher provides **specific** and **critical** (necessary information for successful task completion) feedback to students during and/or after the assignment that is intended to improve student learning.

3 The teacher provides **general** feedback to students during and/or after the assignment that may improve student learning.

2 The teacher provides **minimal or unclear** feedback to students during and/or after the assignment. It is unlikely that this feedback will impact student learning.

1 The teacher **does not** provide students with any feedback at any point during the assignment.