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Promoting and Sustaining Quality in American History Education: A Longitudinal Study

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Abstract

Project USA II provides American History teachers in grades 5 and 8 with institutes, coaching, mentoring, and network groups designed to foster collegial networks and horizontal teaming. Targeted at districts in rural, high-poverty areas, the project emphasizes professional growth for teachers in content knowledge and teaching strategies, mentoring for new teachers, primary source document use, and integration of technology as a research and learning tool. Partnerships with universities, history museums and institutes, as well as professional organizations complement the face-toface mentoring of project History Specialists to provide rich, multi-layered professional development and networking opportunities for participants.

This report summarizes impact of the program on teachers and students. Changes in teachers' content knowledge and adoption of instructional strategies as well as students' interest are reported. Survey and focus group data suggest significant change for both teachers and students. Strong themes of increased student interest, motivation, engagement, and enthusiasm in American History are clear from conversations with teachers. Preparation of teachers for sustainability was strong. This program provides important understanding of the issues in preparing teachers to implement and sustain high quality American History instruction.

Promoting and Sustaining Quality in American History Education: A Longitudinal Study of Reform in Kentucky

Changing history education for middle school teachers involves more than new curriculum. Research on improving student achievement has consistently shown the need to improve teachers' knowledge of their subject matter as well as their implementation of effective teaching strategies (Mayer, 2003; Patterson & Luft, 2002; Sanders & Rivers, 1998). "What teachers know and do is the most important influence on what students learn. Studies show that teacher expertise is the most important factor in student achievement. Competent teaching depends on educators who deeply understand subject matter and how to teach in ways that motivate children and help them learn." (National Commission on Teaching and America's Future, 1996). The heart of school reform lies in improving teachers' depth of knowledge and subject matter competency, along with providing them with content delivery strategies appropriate to students' diverse learning styles and needs.

Most often, teachers employ limited, whole-class instructional strategies, which fail to address the diversity of learning styles and to motivate students (Marzano, Pickering, & Pollock, 2001; Tomlinson & Allan, 2000; Silver, Strong, & Perini, 2000). There is a need for teachers to employ content delivery strategies that address higher order thinking skills, that engage students in authentic learning and assessment activities, and that provide students with opportunities for choice. In addition, if history content is to be learned and retained by students, the delivery mechanisms used by teachers are of utmost importance. Research supports the importance of both a depth of content knowledge and effective content delivery strategies in improving student performance (National Commission on Teaching and America's Future, 1996). Rich and relevant content, linked to clear expectations and performance standards, is pivotal to improving student achievement. Students in classrooms today bring diverse experiences, learning styles, aptitudes, and skills (Gardner, 1983; Cohen, 1994; Bruner, 1977; Marzano, Pickering, & Pollock, 2001; and Silver, Strong, & Perini, 2000). Teachers must possess a repertoire of instructional strategies along with a depth in content knowledge in order to address these diverse student needs and fulfill the federal mandate of "No Child Left Behind."

Project USA II is a professional development effort conducted by the Ohio Valley Educational Cooperative in partnership with six Kentucky school districts and twentythree schools, the Gilder Lehrman Institute of American History, history professors from the University of Kentucky, the University of Louisville, Centre College, Berea College, Transylvania University, Eastern Kentucky University, Georgetown College, and Millersville University, National History Day, Teachers' Curriculum Institute, the Kentucky Historical Society, the Kentucky History Center, the Kentucky Association of Teachers of History; and the Administrative Office of the Courts.

Project USA II provides American History teachers in grades 5 and 8 with institutes, coaching, mentoring, and network groups designed to foster collegial networks and horizontal teaming. Targeted at districts in rural, high-poverty areas, the project emphasizes professional growth for teachers in content knowledge and teaching strategies, mentoring for new teachers, primary source document use, and integration of technology as a research and learning tool. The content covers events leading to our break with England and the creation of our own government; the key people connected with our separation from England and the development of this government, important documents reflecting our new democracy and the struggles behind the development of these documents, the growth of our young republic, Westward expansion, Industrialism, the events leading to the outbreak of the Civil War, the conduct of the War itself, and the Reconstruction Period.

This report includes longitudinal and cross sectional analysis to evaluate progress toward Project USA goals.

Methods

Participants

There were thirty-three teachers who participated in Summer 2006 Professional Development Institutes. These teachers implemented the project intervention in academic year 2005-2006. Data presented in this report represent data collection in Fall 2004 through Summer 2006.

Delivery of Intervention

Development of teacher content knowledge, implementation of instructional strategies, and increases in student outcomes were addressed using four primary approaches. First, teachers attended intensive training sessions to introduce instructional strategies as well as teach American History content. Second, throughout the year, teachers attended networking meetings with their grade level peers facilitated by project History Specialists. These network meetings included presentations from local historians and university professors as well as opportunities to share experiences implementing activities with other project participants. Next, participants attended conferences and project-sponsored "field trips" focused on American History content learning. Finally, project History Specialists provided one-on-one coaching and mentoring through face-toface site visits during American History instructional periods and/or planning periods. History Specialists also provided support in accessing resources and materials in addition to instructional support.

Data Collection Instruments and Procedures

A variety of data sources were used to measure progress toward the project goals. Teacher surveys were administered at workshops hosted by OVEC (Fall 2004, Spring 2005, Summer 2005, Summer 2006). The student motivation survey was administered to students in Fall 2005 and Spring 2006. Finally, students were administered the Kentucky Core Content Test in Spring 2005. Observations by History Specialists were conducted throughout the year.

Network Meeting evaluation form – Network meetings were rated by teachers using one item addressing the benefit of the meeting for the teachers (1=poor, 5=excellent). History experts/University partners and Project USA History Specialists presented content and facilitated book studies on a variety of topics.

Teacher Strategy Use CBAM – Levels of Use of instructional strategies for History adapted from Concerns Based Adoption Model (see Appendix A).

Teacher Content Knowledge Test – 25 item knowledge test adapted from the New York Regent's exam and aligned to Kentucky standards for elementary and middle school. Answers were scored as right or wrong and reliability analyses were performed for the pre and posttests separately. Cronbach's Alpha for the post test (α_{27} =.684 for 22 items) was lower than the pretest (α_{24} =.836 for 25 items), but still high enough to be

satisfactory. Three of the items were excluded from the analyses for the posttest due to zero variance (all teachers got the answers correct) which makes the reliability coefficient somewhat more vulnerable for the posttest because of reduced item pool. *Student Attitudes Toward History Survey* – 13 item attitude survey adapted from Russell & Hollander (1975) Biology Attitude Scale ((see Appendix A). Cronbach's Alpha for both the pre- and posttest were good (Pretest α_{792} =.883; Posttest α_{1037} =.893). *Focus group interview protocol* – facilitator questions for Summer 2006 focus groups; sessions were digitally recorded (see Appendix A)..

History Specialist Observation Form – structured observation form highlighting features of the learning environment, strategy use, technology use, and nature of teachers' questioning and responses to students' questions (see Appendix A).

Unit Evaluation Rubric – History Specialists rated units developed by teachers for the quality of the essential question, activities, use of grant resources, instructional strategies, activities, and assessments. Strongest ratings were for engaging activities (see Appendix A).

Results

Improving teachers' content knowledge and use of instructional strategies in American History

Teachers were positive about the network meetings in focus group conversations as well as evaluation surveys. They appreciated the meetings for the quality of the speakers as well as the opportunities to meet with colleagues. Teachers also had several recommendations for the meetings, including expanding the network to include teachers throughout their county and including local historical sites as meeting places for some meetings. One prominent recommendation was the necessity for meeting topics to be aligned with their curriculum maps so that topics are covered in network meetings before they are taught in the classroom. Finally, teachers gave the highest praise for presenters who provided instructional resources for integrating their material into existing lessons.

Teacher changes in content knowledge were measured using released items from the New York Regents exams (see Appendix B

Table 1 and Table 2 in Appendix B). Differences in teachers' scores from fall to spring using paired t-test analyses were significant (p=.01). In focus groups, teachers consistently and clearly reported increased content knowledge from Network Meetings and the Summer Institutes. They described themselves as more confident and some teachers felt more like experts, better able to answer students' harder questions.

The adoption of the instructional strategies was measured through self-reports on a CBAM from Fall 2004 through Summer 2006 (see Figure 1 in Appendix C). There were 20 teachers with at least 2 waves of data. Most teachers, 70% (n=14) increased their adoption of the instructional strategies, indicated by a higher median use pattern in later waves of data collection. A small proportion, 20% (n=4) had the same level of adoption. Two teachers decreased their patterns of use (from regular to occasional median strategy use).

Throughout the year, History Specialists observed and provided instructional support for all teachers. All teachers were observed implementing project strategies. Patterns of use varied across teachers, with some teachers implementing almost all strategies at least once during a scheduled observation time while others implemented about half of the strategies at some time in the year. Reading for understanding and lecture were the most frequently observed strategies and textbooks were the most frequently observed instructional resources (see Figure 2 in Appendix D). Trends across grade levels for strategy and resource use were about the same, except for textbook use. Observations of textbook use were doubled for 5th grade teachers (see Table 3 in Appendix D).

In about 50% of the observations, most questions were substantive, open-ended, and going beyond factual knowledge according to History Specialists (see Table 4 in Appendix D). Most instructional examples were relevant and appropriate. In about 65% of the observations, most teacher responses to student questions connected over-arching themes with specific historical events. Most examples were integrated throughout instruction. Finally, for about 40% of the observations, most of the learning activities engaged students in exploration of the most relevant concepts of the lesson.

Finally, twenty-three teachers submitted a unit of study to the grant. Units rated by the history specialists indicated strong quality across most indicators with slightly higher quality for 5th grade units (see Table 5 in Appendix D). Lessons were rated on the quality of the essential question, activities, use of grant resources, instructional strategies, activities, and assessments. Strongest ratings were for engaging activities. It appeared that some 8th grade units need improvement in how the instructional strategies are imbedded into the lesson plans. The average overall ratings (on a 7 point scale) were 6.2 and 5.7 (5th and 8th grades respectively).

Improving student interest in American History

Changes in students' interest were tested for 580 students. There were 237 students who took only the pretest and 564 students who took only the posttest. Attrition

in student testing has been substantially reduced from year one; however, the level of missing data is still problematic for making generalizations of change in students' interest. Improvements made in the process at posttest are obvious with the increased testing sample. These improvements need to continue and expand to include all teachers and students.

Difference scores for mean student interest scores were computed for each student. Frequencies for change from fall to spring showed that 50% (n=293) of students increased their scores (differences ranged from .03 to 2.46 points on the 5 point Likert scale). Repeated measures ANOVA were computed testing for differences from fall to spring as well as differences between schools from fall to spring (see Table 6 in Appendix E). Results indicated that changes from pre- to posttest were significant (F(12)=8.148, p=.004). The interaction between school and semester was also significant (F(12)=3.089, p=0003). Power for both analyses was strong (.813); however, effect sizes (η^2_p =.014 for semester; η^2_p =.062 for Semester X School interaction) were small, indicating variation in students' scores were largely unexplained by these factors (see Table 7, Table 8, and Table 9 in Appendix E). Tukey post hoc comparisons were computed to investigate differences between schools in student interest changes from fall to spring.

Feedback from teacher focus groups supported conclusions from the statistical analysis of survey responses. Strong themes of increased student interest, motivation, engagement, and enthusiasm in American History are clear from conversations with teachers.

Building local capacity to sustain practices

Sustainability relies on building capacity of participating teachers as well as establishing an infrastructure to provide minimal resources for continuing key program elements. In terms of preparing participating teachers, results are strong. All teachers from all districts attended at least one Network Meeting in 2005-2006. Middle school teachers (n=16) attended an average of seven meetings throughout the year. Elementary teachers (n=17) attended an average of nine meetings throughout the year. There were four elementary and eight middle school teachers who attended the KCSS conference.

In addition to Network Meetings, there were nine additional learning opportunities promoted by the grants. These opportunities included guest lectures, living history performers that came to participants' schools, organized social studies/history themed conferences, as well as a four day trip to Boston. Participation levels varied. In total, 61% of teachers (n=20) participated in at least one of these additional learning opportunities. One teacher participated and completed certification for coaches for History Alive!

There were a number of important relationships that emerged from teachers' suggestions about sustainability. Teachers described the need for teachers who have participated in the grant to work with administrators to get resources and materials to sustain the curriculum. Teachers described the need for sustaining relationships with each other and expanding as mentors to teachers who have not participated. Finally, teachers discussed the relationships and opportunities OVEC can cultivate to provide avenues for sustainability.

Conclusions

Teachers repeatedly and consistently gave positive feedback on the quality of the content-focused professional development. Teachers appreciated the impact of these sessions as well as the additional professional development opportunities (e.g., lectures, conferences, field trips) on their content knowledge. Most teachers have increased their adoption of the instructional strategies. These results are corroborated by History Specialists' classroom observations. Units rated by the history specialists indicated strong quality across most indicators. Teachers were consistently positive about the quality, relevance, and impact of the networking meetings and classroom visits from History Specialists.

Changes in students' interest showed significant (though small) increases. Feedback from teacher focus groups supported conclusions from the statistical analyses of survey responses. Strong themes of increased student interest, motivation, engagement, and enthusiasm in American History are clear from conversations with teachers.

Finally, preparation of teachers for sustainability is strong. All teachers from all districts attended at least one Network Meeting and several teachers attended multiple opportunities outside grant required professional development. There were a number of important relationships that emerged from teachers' suggestions about sustainability. Teachers focused on their role with other teachers inside and outside the grant as well as OVEC's role in cultivating state and federal support for sustainability

Discussion

The significance of Project USA II lies in the systemic and comprehensive nature of the professional development model, along with the partnership model with a large number of university history professors. The model for professional development blends intensive and extensive high quality training sessions with ongoing, frequent monitoring of how the participants are actually using the knowledge that they have gained through the professional development sessions. The twice-a-month contact with teachers, both in their classrooms and through networking/study group meetings, provides for a high level of implementation, growth in teacher quality, and overall accountability to continuous improvement (McDiarmid, 1994). The long term impact of this initiative, building local capacity to implement and sustain high quality instruction in American History, is pivotal to reforming history instruction. As one teacher remarked, "What will happen if we have a generation of kids who don't know or care about the history of our nation?" It is a question that we need to address with due diligence and passion.

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Appendix A

PARTICIPANT EVALUATIONS

Professional Development Topic/Title:

Location:

CIRCLE the number that best indicates your response for completing the following statements about the training:

Date:

	Cl	RCLE	THE N	JUMBI	ER
	Uncle	ar		Very	clear
1. The Purposes and objectives of the training were:	1	2	3	4	5
	Poor			Excel	lent
2. Time allocations for the training components were:	1	2	3	4	5
	Inappi	ropriate		Appro	opriate
3. The activities of the training were:	1	2	3	4	5
	Of litt	le help		Very	helpful
4. The information presented will be:	1	2	3	4	5
-	Of litt	le help		Very	helpful
5. The handout material will be:	1	2	3	4	5
	Not at	all		Great	ly
6. This session improved my instructional strategies	1	2	3	4	5
&/or content knowledge:					
C	Unlike	ely		Defin	ite
7. The probability of my using the skills/	1	2	3	4	5
knowledge acquired in this training is:					
	Insuff	icient		Suffic	cient
8. The hands-on activities were:	1	2	3	4	5
	Ineffe	ctive		Effect	tive
9. The presenters of this training were:	1	2	3	4	5
	Poor			Excel	lent
10. Overall, the training was:	1	2	3	4	5

Use additional page for items 11, 12, and 13. If needed.

11. The strengths of this training were:

12. The weaknesses of this training were:

13. The suggestions you have for refinement of this training are:

Promoting and Sustaining Quality

Project USA Network Group Meeting Evaluation

Meeting Date:

Location:

Please rate the overall benefit of this meeting:

1	2	3	4	5
poor		average		excellent

What were the strengths of this meeting? What were the weaknesses of this meeting? Suggestions or ideas for improvement:

Concerns-Based Adoption Model A Continuum for Assessing Knowledge, Understanding, and Usage Project USA

Name: School:

Grade Level:

Directions: It is important to reflect on your personal development of knowledge, understanding, and use of the various topics and strategies that are a part of Project USA.

Please consider your knowledge, understanding and ability to implement the following practices. <u>Please use a an X to mark where you are now.</u>

	<u>Unfamiliar</u> with	Aware of the	<u>I am actively</u>	<u>Using</u>	<u>Using</u>
	the	concept/practice	learning more about	Occasionally	<u>Regularly</u> in
	concept/practice	but <u>have no</u>	the concept/practice	in my	my
		<u>plans of</u>	to implement in my	classroom	classroom
		implementing	classroom		
1. Visual discovery / interactive slide lecture					
2. Social Studies skills builder					
3. Experiential exercise					
4. Writing for understanding					
5. Response groups					
6. Problem solving group work					
7. Interactive student notebook					
8. Effective history assessment					
9. Reading for understanding					
10. Utilization of narrative themes in history					
11. Utilization of primary source documents in					
history					
12. Effective integration of technology into					
history instruction					
13. Differentiating history instruction for					
individual learners					

Teaching American History Grant Unit Rubric June 2006

	Not at	Somewhat	Very
	all		appropriate
Essential question is relevant and appropriate			
	Not at	Somewhat	Consistently
	all		
Lesson activities are connected to essential question			
Unit shows evidence of grant resources			
Unit shows evidence of grant instructional strategies			
Unit aligns with core content			
Activities are engaging and motivating			
Activities are meaningful and appropriate			
Assessments are appropriate and connected to primary			
lesson purposes			
	Poor	Average	Excellent
	Quality	Quality	Quality
Quality of resources in the unit			

Overall Unit Rating

1	2	3	4	5	6	7

The American History Attitude Scale

Each of the statements below expresses a feeling toward American History. Please rate each statement on the extent to which you agree. For each, you may:

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

	Strongly	Agree	Undecided	Disagree	Strongly
	Agree			_	Disagree
1. American History is very interesting to	5	4	3	2	1
me.					
2. I don't like American History.	5	4	3	2	1
3. I am always under terrible stress in my	5	4	3	2	1
American History class.					
4. American History is exciting and fun.	5	4	3	2	1
5. American History makes me feel restless.	5	4	3	2	1
6. In general, I have a good feeling toward	5	4	3	2	1
American History.					
7. When I hear the word "American	5	4	3	2	1
History," I have a feeling of dislike.					
8. I approach American History with a	5	4	3	2	1
feeling of dislike.					
9. I really like American History.	5	4	3	2	1
10. I have always enjoyed studying	5	4	3	2	1
American History in school.					
11. It makes me nervous to even think about	5	4	3	2	1
doing an American History project.					
12. I feel comfortable in American History	5	4	3	2	1
and like it very much.					
13. I feel a definite positive reaction to	5	4	3	2	1
American History; it's enjoyable.					

Adapted from Russell, J. & Hollander, S. (1975). A biology attitude scale. The American Biology Teacher, 37 (5), 270-273.

Validity information:

Description:

The biology attitude scale is a 22-item instrument that is designed to measure students' attitudes toward biology; in particular, it is designed to measure their feelings of like or dislike about biology. Fourteen of the items use a Likert-type scale (five-point agree-disagree scale) and eight items use a semantic differential scale (five-point bipolar adjective scale). The instrument was developed on the assumption that an important consequence of instruction is a change in the student's attitude toward the subject, and the authors argue the importance of focusing on attitudes by stating that there usually exists a positive correlation between attitudes and achievement. The authors state that the instrument is not intended to measure absolute attitudes toward biology; rather, it is designed to detect and measure changes in attitude generally from the beginning and end of a course.

Of a total of 30 Likert-type items initially developed, the authors used fourteen items whose correlations were high ($r \ge .80$, n = 54). The eight semantic differential items used were based upon work by Osgood, Suci, and Tannenbaum (1957). To determine the concurrent validity and test-retest reliability, the instrument was administered twice to four undergraduate biology classes. The mean correlation between the Likert-type items and the semantic differential items was about .80, indicating high concurrent validity. The test-retest reliability was also high – correlations were never under .90 for the Likert-type scale, and .80 for the semantic differential scale.

To measure the effectiveness of the Biology Attitude Scale, the authors administered the instrument as a pre- and post-test in three introductory biology courses (n=675) and a group of students who were not taking any biology courses (n=31). Two of the biology courses were for majors, and one was for non-majors. As the authors expected, student in the major courses scored higher on the pre-test, and there was no change in the scores of students who were not taking a biology course.

Project USA – 2 Focus Group Protocol June 2006

Please describe your implementation of the instructional strategies (e.g., visual discovery, problem solving group work, using narrative themes, skills builder) introduced by the grant.

1. Please describe your implementation of these strategies. How did you integrate them into your instruction?

2. Please describe the impact of these strategies on your students' content knowledge.

3. Please describe the impact of these strategies on your students' interest in American History.

4. Please describe any barriers to your implementation of the strategies.

5. Please describe the key support systems to success for this project.

Please describe the impact of the content-focused professional development opportunities, including intensive workshops, conferences, networking, and site visits by Project USA staff (Anne Marie, Glenn and Paula).

1. To what extent have you changed your instructional practices or curriculum based on these content-focused resources?

2. How has this focus on history content influenced your students?

3. Think specifically about your networking meetings with history experts. How have these meetings contributed to building your content knowledge or your integration into the curriculum?

4. Think about the visits from your History Specialist and the support provided in assisting with the implementation. What was the impact of this? Are there ways you would like to see this support changed?

5. Now think about the OVEC workshops you've attended. What has been your experience with the various content experts and their presentations?

6. Talk about any conferences or additional learning opportunities you've experienced. What has been the impact of these on your practices?

7. Please give us feedback on your overall experience with the Teaching American History project. Will you continue the strategies and curriculum? What would help make it more sustainable and grow at your school or district?

8. What would help make the implementation of more content-focused American History curriculum sustainable and grow at your school or district?

Appendix B

Table 1. Teacher Content Knowledge t-Test

Paired Samples Test	Paired Differences			95% Confidence Interval of the Difference				erence
	Mean	Std.	Std. Error	Lower	Upper	t	df	Sig.
		Deviation	Mean					(2-tailed)
Fall2005 –	-3.545	6.1854	1.318741	-	-0.80298	-2.68851	21	0.013756
Summer2006				6.28793				

Table 2. Differences for Elementary and Middle School

Grade		Total_Fall2005	Total_Summer2006
5	N	7	5
	Mean	18.42857143	21.2
	Std. Deviation	3.823486317	1.303840481
8	Ν	17	14
	Mean	21.23529412	22.5
	Std. Deviation	4.176263458	2.175033156
Total	Ν	24	19
	Mean	20.41666667	22.15789474
	Std. Deviation	4.20058657	2.034785216

Appendix C

Figure 1. CBAM Strategy Adoption 2005-2006



Appendix D





	5th Grade	8th	Total
		Grade	
Experiential Exercise	22	12	34
Problem Solving	10	8	18
Read for Understanding	73	54	127
Response Builders	16	15	31
Skill Builders	25	26	51
Visual Discovery	29	25	54
Writing for Understanding	34	45	79
Hands on	36	18	54
Coop Groups	51	38	89
Peer Tutor	4	3	7
Lecture	82	72	154
Students create Products	36	22	58
Instructional Resource: Primary Resources	5	21	26
Instructional Resource: Textbook	96	46	142
Instructional Resource: Supp Materials	45	34	79
Instructional Resource Stud Generated Products		14	14

Table 3. History Specialists' observations of strategy use by grade level

	Not	Very	Some
	observed	little	
Stud at desks	5.7	5.0	18.3

44.6

7.5

40.9

38.7

3.4

3.9

4.5

5.2

24.8

10.2

17.6

11.2

10.6

5.8

3.7

3.0

5.7

6.1

18.5

31.6

18.7

22.1

40.4

26.8

24.4

34.9

27.6

Mostly

71.0

26.6

43.2

29.2

28.6

50.4

65.6

68.1

54.2

41.4

Table 4.	History	Specialists'	ratings	of learning	activities
1 4010 4.	Instory	Specialists	runngs	or rearining	uctivities

Stud in groups

Stud work independently

Stud work collaboratively

Questioning beyond fact

Responses connect themes

Examples throughout instruction

Activities stud explore concept

Stud work displayed

Examples relevant

Percent Rating	5th	8th					
Essential ques	100	80					
N5th=13; N8t							
Percent Rating	5th	8th					
Lesson activit	100	100					
Unit shows ev	77	90					
Unit shows ev	85	40					
Unit aligns wi	85	90					
Activities are	85	60					
Activities are	70	70					
Assessments a	82	56					
lesson purposes							
N5th=13; N8t	h=10)					
Percent rating		5th	8th				
Quality of res	70	30					
N5th=13; N8t	h=10)					
Overall Unit Rating	Ν	Minimum	Maximum	Mean	Std. Deviation		
(1 to 7)							
5th Grade	13	4	7	6.230769	1.012739		
8th Grade	10	4	7	5.7	1.159502		

Table 5. History Specialists' Unit ratings

Appendix E

Table 6. Descriptive Change in Score

Mean Change in Interest	Ν	%
Increase in Interest Score	293	50
No Change	29	5
Decrease in Interest Score	258	45

	Semester 1		Semester 2			
School	Mean	Std. Deviation	Ν	Mean	Std. Deviation	Ν
Bowling MS	3.325902	0.817042958	89	3.366177	0.868249284	89
Bullitt Lick MS	3.084499	0.775047345	55	2.967832	0.749928458	55
Cedar Grove ES	3.401857	0.649983436	29	3.167109	0.913658213	29
Elkhorn MS	3.494594	0.69214878	83	3.602564	0.644241465	83
Grant County MS	3.656735	0.627416703	71	3.803178	0.613067404	71
Hebron MS	3.142589	0.664484919	82	3.102095	0.757229894	82
Maryville ES	3.172343	0.752938761	27	3.480057	0.676775163	27
Nichols ES	3.24095	0.521417615	17	3.782805	0.701981185	17
Overdale ES	3.871795	0.521456468	20	3.589744	0.700629743	20
Roby ES	3.071795	0.903544534	10	3.260256	0.836882645	10
Shepherdsville ES	3.316239	1.009162495	9	3.893875	0.64034508	9
Simpsonville ES	3.557768	0.875736355	23	3.733278	0.700140601	23
Wright ES	3.259049	0.719660786	53	3.239961	0.749528364	53
Total	3.353849	0.74396759	568	3.403824	0.785024923	568

Table 7. Mean Student Interest Score by School

Tests of With	nin-Subjects Effects								
Source		Type III Sum	df	Mean Square	F	Sig.	Partial Eta	Noncent.	Observed
		of Squares					Squared	Parameter	Power(a)
Semester	Sphericity Assumed	1.859792734	1	1.859792734	8.14816974	0.004472	0.014469	8.14817	0.813159
	Greenhouse-Geisser	1.859792734	1	1.859792734	8.14816974	0.004472	0.014469	8.14817	0.813159
	Huynh-Feldt	1.859792734	1	1.859792734	8.14816974	0.004472	0.014469	8.14817	0.813159
	Lower-bound	1.859792734	1	1.859792734	8.14816974	0.004472	0.014469	8.14817	0.813159
Semester * School	Sphericity Assumed	8.461021975	12	0.705085165	3.089136491	0.0003	0.06261	37.06964	0.993711
	Greenhouse-Geisser	8.461021975	12	0.705085165	3.089136491	0.0003	0.06261	37.06964	0.993711
	Huynh-Feldt	8.461021975	12	0.705085165	3.089136491	0.0003	0.06261	37.06964	0.993711
	Lower-bound	8.461021975	12	0.705085165	3.089136491	0.0003	0.06261	37.06964	0.993711
Error (Semester)	Sphericity Assumed	126.6769103	555	0.228246685					
	Greenhouse-Geisser	126.6769103	555	0.228246685					
	Huynh-Feldt	126.6769103	555	0.228246685					
	Lower-bound	126.6769103	555	0.228246685					
^a Computed using alpha = .05									

Table 8. Tests of Within-Subjects Effects of Student Interest

Tukey HSD					95% Confidence Interval	
(I) SchoolName	(J) SchoolName	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Bowling MS	Grant County MS	-0.383917403	0.103330348	0.0138	-0.727732668	-0.040102137
Bullitt Lick MS	Elkhorn MS	-0.52241343	0.112904495	0.0003	-0.898085142	-0.146741718
	Grant County MS	-0.703791162	0.11664519	0.0000	-1.09190944	-0.315672884
	Overdale ES	-0.70460373	0.169561156	0.0026	-1.268791452	-0.140416007
	Simpsonville ES	-0.619357454	0.161247919	0.0088	-1.155884205	-0.082830703
Elkhorn MS	Bullitt Lick MS	0.52241343	0.112904495	0.0003	0.146741718	0.898085142
	Hebron MS	0.426236842	0.101108596	0.0020	0.089814104	0.762659581
Grant County MS	Bowling MS	0.383917403	0.103330348	0.0138	0.040102137	0.727732668
	Bullitt Lick MS	0.703791162	0.11664519	0.0000	0.315672884	1.09190944
	Hebron MS	0.607614574	0.10526929	0.0000	0.257347789	0.95788136
	Wright ES	0.480451451	0.117878829	0.0036	0.088228435	0.872674468
Hebron MS	Elkhorn MS	-0.426236842	0.101108596	0.0020	-0.762659581	-0.089814104
	Grant County MS	-0.607614574	0.10526929	0.0000	-0.95788136	-0.257347789
	Overdale ES	-0.608427142	0.161946006	0.0119	-1.147276666	-0.069577618
	Simpsonville ES	-0.523180867	0.153220151	0.0381	-1.032996498	-0.013365235
Overdale ES	Bullitt Lick MS	0.70460373	0.169561156	0.0026	0.140416007	1.268791452
	Hebron MS	0.608427142	0.161946006	0.0119	0.069577618	1.147276666
Simpsonville ES	Hebron MS	0.523180867	0.153220151	0.0381	0.013365235	1.032996498

Table 9. Post Hoc Comparisons Between Schools