

## Implementing an Evidence-based Reflective Teaching Cycle: Using Scholarly Research in Curriculum Design

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*Course curriculum design using a research-teaching connection and reflective teaching is presented. The research-teaching connection is expanded to a three stage research-teaching-research cycle and reflection is expanded to include both faculty and students. Traditional disciplinary educational research was used to inform the design of the curriculum, and Scholarship of Teaching and Learning (SoTL) research was used to measure the success of the course design in achieving its objectives for student learning. The objective of the course redesign was to better engage students in applying the authentic disciplinary practices of the field of history teacher preparation. The research project documented how the research-based instructional practices were taught to students, how the students subsequently put this knowledge into practice and how the course was modified over four years based on evidence-based reflection. Conclusions and implications for using evidence-based reflective teaching to improve teaching effectiveness as applied to other disciplines are discussed.*

### Introduction

Teacher preparation within higher education presents intellectual challenges that engage both the scholar-researcher and teacher roles of the profession. One important challenge is how teaching and educational research can be brought into closer relationship to ultimately benefit teacher candidates. Implications from this scholarship also provide useful evidence to inform the current debate in the United States about the impact of various models of teacher preparation. Rather than seeing educational research and teaching as antithetical, I provide a model that is unified and integrated, adding benefits to both teaching and educational research through an evidence-based reflective cycle. This model involves a cycle using scholarly educational research, scholarship of teaching and learning (SoTL) research, and outcomes based assessment of student learning. My “research-teaching-research” cycle involves multiple educational research projects and a reflective teaching cycle implemented over a longitudinal period. I first conducted traditional scholarly research, implemented that into my course design and teaching, and then used SoTL research to determine the impact of the changes in my teaching on the learning goals for my teacher candidates. The teacher-scholar can be a scholar of both his or her discipline and the teaching of that discipline.

The purpose of the research was to measure the success of the course redesign using SoTL research and to complete an evidence-based reflective teaching cycle using the results gathered. This goal was accomplished by collecting data on teacher candidates’ use of authentic disciplinary strategies for teaching secondary history in both the senior capstone/methods course and in their subsequent student teaching experience and using this evidence as the basis for my own reflective decision making to improve course instruction. The basis for this study was my initial observation that teacher candidates often fail to implement the teaching strategies they have been taught in their methods courses during their

student teaching experience, but instead rely on the way they had been taught in high school or simply use their cooperating teacher's ideas. In order to increase the likelihood that candidates would implement the research-based best practices they had been taught in their methods course into their classrooms, I needed to make sure my course instruction focused on these practices, gave students reasons for using the strategies, and offered opportunities to practice implementing them. Interview responses from candidates in the final cohort indicated that my instruction had been successful in achieving this objective. Candidates commented, "I am more comfortable in terms of my fluency with integrating the strategies into plans"; "I have confidence with how successful [the strategies] will be"; "I feel they are best practice for history instruction"; "I use them without even thinking they are McRAH strategies; they are just how I teach now"; and "I just think of it as my professor's advice on how to teach history."

Research questions focused on which strategies taught to the candidates were most and least implemented and what impact various teaching methods and course experiences had on the candidates' implementation of the strategies. The research project documented how the authentic disciplinary strategies were taught to students and how the students subsequently put this knowledge into practice. Documenting how students actually implemented the practices taught is the only way to really know if the longitudinal evidence-based reflective course redesign process improved the student learning outcomes desired. Using evidence-based reflection over four cohorts enabled an on-going evidence-based reflective cycle. Making the design of the course transparent to students also aided in their own reflection and consciousness of their practice. Using an evidence-based reflective cycle (including reflection by students and faculty) enabled modification of the curriculum of the course each year based on evidence gathered from the research-teaching-research cycle.

The connection between research and teaching has been supported by previous research. Elton (2001) indicates the relationship between good research and good teaching is dialectic, i.e. they support each other and all academic activities should be influenced by scholarship. Yorke and Knight (2007) advocate educators making evidence-informed professional decisions regarding their practice, and Damian (2014) stresses that reflective practice is foundational for many teacher education programs, and that what is true of teacher education is true in higher education more broadly. Similarly, I used research methods from the field of teacher education to analyze my practice of teaching through collecting data for the scholarship of teaching and learning in a similar manner to my previous disciplinary research in history teacher education.

### **Literature Review**

Reviewing prior research in areas that connect research and teaching, reflective practice, discipline-specific teacher education (secondary history in this case) and SoTL research is valuable to framing this study and interpreting its results.

### **Research-Teaching Connection**

Research and teaching are mutually reinforcing endeavors and thus synergies between teaching and research are essential. According to Clark (2009), the scholarship of teaching and learning must become part of the reinvigoration of effective teaching practice. When

constructed and contingent with documentation and analysis of practice this process can enhance the quality and outcomes of the learning experience for both students and academics (Malcolm, 2014).

Foundational work by Boyer (1990), Bass (1999), Hutchings (2000), and Huber and Morreale (2002) define SoTL as scholarship undertaken in the name of change, with one measure of its success being its impact on thought and practice (Hutchings, 2000, p. 8). A white paper published by the Teagle Working Group on the Teacher-Scholar (2007) sees scholarship and teaching as mutually sustaining endeavors. The teacher-scholar is at once deeply committed to inquiry in his or her disciplinary field and passionately devoted to successful student learning through teaching and effective institutional practices.

Research activities such as the scholarship of teaching and learning and self-study action research are potentially of great value. They lead to teaching being treated as a researchable and researched activity. Elton (2001) concludes that scholarship should be viewed as not only supporting research and teaching, but also supporting practice and integration. All academic activities should be influenced by scholarship, and if they are, “then it may well be true that there exists this link between them and research (in its widest sense)” (p.48).

The teaching of the best professors is animated by the synergy between teaching and scholarly interests. In the classroom, a professor’s engagement with current research and thinking in his or her field keeps the presentation of material fresh, and direct reference to critical or scholarly debates shows students that the questions under discussion are consequential matters that have engaged the interest of serious minds. Faculty are likely to have the greatest impact on students when their teaching is connected to their roles as expert scholars, and they will be more effective when their ideas about teaching and their knowledge of student learning outcomes can feed back into curriculum design and teaching strategies (Teagle, 2007).

### **Reflective Practice**

The framework for the case study presented here resolves around reflective practice. According to Clark (2009),

We need to develop reflective best practice born of an engagement with research into discipline-based teaching and learning. This engagement must also have a purposeful outcome. What use is the scholarship of teaching and learning unless this knowledge can be translated into improved learning outcomes? One way to achieve this change may be to use an understanding of the scholarship of teaching and learning to develop better curricula. (p.1)

A reflective practitioner can change curriculum and instructional strategies without waiting for new research from others. According to Loughran (2007), self-study allows educators to reflect systematically upon and study their practice in an effort to identify tensions or dissatisfactions. Duarte and Fitzgerald (2006) suggest that for a reflexive teaching approach to be successful, reflexivity must be linked to action. In other words, a teacher-scholar must use reflection to convert research to teaching practice, as is the case with the study described in this report.

**History Education and Methods Course Research**

In order to determine what authentic disciplinary practices to include as objectives of the course curriculum being studied here, it is necessary to examine the research on best practices in teacher education and secondary history teaching. Best practices in history teaching engage students with both historical understandings and historical thinking skills in the history classroom. As VanSledright (2011) notes, history education research supports a more active learning style that has students acting as inquirers following a process that “results in the sorts of deep knowledge possessed by the experts” (p. 161). Historical pedagogy means leading students through the processes of “doing history.” In this context, “doing history” is defined as students using the methods and heuristics used by historians at an appropriate level for their cognitive and educational development.

An examination of work with in-service teacher professional development serves as a good model to adapt to pre-service education. I shared the authentic teaching strategies developed from the in-service model of best teaching practices from my previous scholarly research with the pre-service teacher candidates in this study (Ragland, 2007a, 2007b, 2009, 2014, 2015). These strategies are referred to as McRAH (Model Collaboration: Rethinking American History) from the title of the original grant project in which the strategies were developed. These best practices for teaching history include the use of primary documents and document based questions (DBQ’s), use of conceptual questions, images, media and multimedia and perspective-taking exercises. The full list is found in Table 1 below.

Table 1. *McRAH Instructional Strategies*

<b>McRAH (Model Collaboration: Rethinking American History) Instructional Strategies</b>
1. Use of Primary Documents and Document Based Questions (DBQs)
2. Historical artifact analysis
3. Use of “doing history” classroom activities (contextual analysis to question historical interpretations; present more than one possible cause for historical events and have students evaluate; use historical fact as evidence for arguments; student presentations of interpretations)
4. Use of “doing history” research assignments (where historical interpretations are questioned, students research for facts and counterfactuals to build an argument for why historical events took place as they did)
5. Thematic instruction including variety of textual resources
6. Use of conceptual questions to organize lecture material
7. Use of graphic organizers, interactive note-taking and maps to develop main concepts
8. Use of images/media/multimedia/technology as sources for historical Interpretation
9. Use of counterfactual approach (What would have happened if)
10. Use of narrative approaches including guided imagery for response
11. Perspective-taking exercises: role-plays, scenarios, inclusive subjects and conditions, present-minded responses put in historical context, impact of individuals on history
12. Use of familiar, familial, and community connections to propose historical links

Within teacher preparation programs, methods courses designed to influence beliefs and practices (Osisioma & Moscovici, 2008) have been shown to be effective. Teachers' attitudes and beliefs play major roles in shaping their instructional practices in the classroom (Lumpe et al. 2000; Ucar, 2012). I measured candidates' attitudes toward the strategies they were taught in this study, as recommended by this research.

The social studies methods course is a key developmental milestone for preparing teacher candidates to accomplish these tasks. It is a capstone experience in the classroom sequence and the final course before student teaching. Prior research has indicated the positive impact of the discipline-specific methods course on teacher candidates. "Instructional-strategies efficacy was shown to be statistically significant and positively affected by the secondary methods course," according to Wagler and Moseley (2005, p. 453). Methods instructors should design course projects that challenge pre-service teachers' perceptions of history, their approaches to "presentism<sup>1</sup>," their presentation of historical content, and their development as knowledgeable and empowering professional educators (Lovorn, 2012).

A goal of the methods course, and a way to influence candidates' beliefs, attitudes, and practices, is the engagement of candidates with historical materials and methods, so that they will convey their excitement with the methods to their students. My methods course uses an incremental and explicit approach to introducing candidates to the methods of "doing history." Candidates are given opportunities to learn how historians conduct research and how to convey these historical heuristics to secondary students. In order to gain authentic experience with the strategies they will use with their middle and high school students, teacher candidates need to conceptualize and employ constructivist instructional approaches during their pre-service preparation (Isikoglu, 2008, p. 190). This includes use of micro-teaching, lesson planning, and unit planning activities during their senior methods course. This explicit instruction is documented in Table 2 below. The McRAH strategies were modeled and practiced by candidates during the course in many ways.

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<sup>1</sup> Presentism is the anachronistic introduction of present-day ideas and perspectives into depictions or interpretations of the past. It is often defined for students as "seeing the past through the eyes of the present."

Table 2. *Methods Course Curriculum*

<b>Lessons Embedding Authentic Practice for Candidates with McRAH Instructional Strategies</b>
<p><b>Sample primary documents used by candidates to practice heuristics used by historians (contextualizing; sourcing; corroboration):</b></p> <ul style="list-style-type: none"> <li>• Seneca Falls Declaration of Sentiments</li> <li>• Cherokee removal documents, including images</li> <li>• PBS lesson on Rosa Parks</li> <li>• Thomas Jefferson and Sally Hemmings documents</li> <li>• United Nations Charter</li> </ul>
<p><b>Sample practice with historical thinking and understandings:</b></p> <ul style="list-style-type: none"> <li>• Analysis of lesson on slave resistance from Chicago History Museum for concepts of time/ change/ empathy/ cause/ evidence/ accounts</li> <li>• PBS lesson on Rosa Parks - analyze for elements of concepts/facts/generalizations</li> <li>• Write a question at each level of Bloom’s taxonomy based on the UN Charter</li> </ul>
<p><b>Sample in-class activities with McRAH strategies:</b></p> <ul style="list-style-type: none"> <li>• <u>Primary document analysis</u> using multiple protocols             <ul style="list-style-type: none"> <li>○ SOAP (B) [Source; Occasion; Audience; Purpose; Bias]</li> <li>○ SAMS [Source; Audience; Media; Setting]</li> <li>○ MARCO [Media; Author; Reliability; Context; Occasion]</li> </ul> </li> <li>• <u>(Document Based Questions) DBQ</u> <ul style="list-style-type: none"> <li>○ Process of grouping/sorting – practice DBQ Project protocol /Do an example from binder</li> </ul> </li> <li>• <u>Artifact analysis</u> - nail activity/statue activity- small group inquiry activity</li> <li>• <u>“Doing history” classroom and research activities:</u> <ul style="list-style-type: none"> <li>○ Embedded in practice teaching mini-lessons</li> <li>○ Embedded in Model Unit Plan</li> </ul> </li> <li>• <u>Thematic Instruction:</u> embedding thematic structure required in Model Unit Plan             <ul style="list-style-type: none"> <li>○ Conceptual questions - give examples from unit plans</li> </ul> </li> <li>• <u>Graphic organizers/Interactive Note-taking guides</u> <ul style="list-style-type: none"> <li>○ used while viewing video examples of history lessons</li> </ul> </li> <li>• <u>Images/Media/Multimedia/Technology</u> <ul style="list-style-type: none"> <li>○ <i>Timeliner</i> and other software</li> </ul> </li> <li>• <u>Guided Imagery and Narrative</u> <ul style="list-style-type: none"> <li>○ Historical head using DBQ on Andrew Jackson</li> <li>○ Using Young Adult Literature</li> </ul> </li> <li>• <u>Perspective- taking activities:</u> <ul style="list-style-type: none"> <li>○ Participation in mock jigsaw/debate/and other small group methods</li> <li>○ Inquiry (History as Mystery)</li> </ul> </li> </ul>

**Connection of SoTL with Teacher Education Research**

Huber and Hutchings (2005) comment that scholars of teaching and learning in higher education owe a debt to the K-12 teacher-research movement and to other disciplines and fields that have developed the methods and paradigms for action research. In this case, research on in-service (classroom teachers) teacher education was brought into the design of the pre-service (undergraduate teacher candidates) teacher education course. I used research methods from the field of teacher education to analyze my teaching using similar data

collection tools to my previous disciplinary research in history education for this SoTL process.

Teacher educators must address the divide between research and practice that permeates much of the literature and discourse related to education (Loughran, 2007). Managing this divide presents a challenge for teacher educators (Flessner, 2012). Research can be incorporated into teaching by actively engaging candidates, through a case study where undergraduate candidates are invited to participate in a research project, as was the context in the study reported here. The teacher's research and scholarly activity become a structural element in the learning process for students, and students become participants in research for the advancement of knowledge. Flessner (2012) reports a similar process in which the teaching and variety of pedagogies he used were modified as the question of "how can we, as teacher educators, better connect the worlds of educational research and practice as we interact with pre-service teachers?" (p. 167).

## **Research Design**

### **Case Study Description**

This case study brings together lines of inquiry on the research-teaching link with inquiry on reflective practice in higher education teaching. In addition, these lines of research are modified by expanding the research-teaching connection to a three-stage research-teaching-research cycle and expanding reflection to include both faculty and students. The first research stage was conducted from 2001-05 as part of a U.S. Department of Education's *Teaching American History* grant (McRAH). This grant created a collaborative partnership of secondary history teachers and professors of history and education that developed the successful strategies for changing teaching practices in history classrooms (see Table 1). This was followed by the teaching stage that introduced these research-based best practices in an incremental and explicit way to candidates during the methods course in an iterative process over a number of years. Finally, there was a second research stage in which SoTL research was used to document and analyze candidates' use of the strategies during their pre-service activities.

In order to expand these lines of inquiry, I structured my work around two elements: the re-conceptualization of the methods course based on my prior research in the field of history pedagogy and the collection and analysis of quantitative and qualitative data to determine the extent to which this course design resulted in the desired practices on the part of candidates. As previously mentioned, the goal of the research was to measure the success of the course redesign using SoTL research and to complete an evidence-based reflective teaching cycle using the results gathered. Specifically, the research questions I looked at were:

- 1) Which research-based history instructional (McRAH) strategies were most and least implemented by the candidates?
- 2) What impact did various pre-services experiences in the curriculum have on the implementation of the McRAH strategies over the course of four cohorts of candidates?
- 3) Using evidence from measuring changes in candidates' implementation of the

strategies, how did outcomes match the goals set in the research-teaching-research and reflective teaching cycles of course redesign?

The first step in redesigning the course was to determine course goals and student learning objectives based on embedding authentic strategies for history pedagogy. These strategies came from traditional scholarly research completed with in-service teachers during the federal grant program, as mentioned earlier. The McRAH project made conscious use of the authentic work of historians and in-service secondary history teachers. The resulting strategies are found in Table 1.

Next, the course employed direct modeling or viewing of video examples of the McRAH strategies during class time, followed by group or paired practice with the strategies during class time, and concluded with independent practice by candidates through course assignments. These independent practice assignments involved practice micro-teaching demonstrations, lesson plan creation, and a culminating three-week unit plan on a topic in American history. Specific examples of opportunities for candidates to practice the McRAH strategies during the course are detailed in Table 2. There was no specific requirement for the candidates to use any of the strategies in the course assignments. If the strategies were incorporated, it was based on the candidate's choice and belief in their efficacy. As the course curriculum was modified over the years using evidence-based reflection, a requirement was added to include a DBQ in the culminating unit plan, but only for the last cohort. Similarly, during the student teaching phase the cooperating teachers were not made aware of the study or the McRAH strategies in any way. The final step of the research design involved systematic data collection, discussed below, to document the use of the strategies in the course assignments and subsequent student teaching.

### **Data Collection and Analysis**

The study used quantitative and qualitative data collected over a 4-year period (2006-2010) with four cohorts of pre-service teacher candidates in a secondary history licensure program at a small Midwestern liberal arts college. The total sample consisted of ten candidates who were all double majors in history and secondary education. All candidates were enrolled in a required discipline-specific senior seminar methods course, EDUC 420: Secondary Instructional Design for Social Studies, to prepare them for their subsequent enrollment in a fourteen-week student teaching placement in high school history classrooms. My role was as both the methods course instructor and the student teaching supervisor. Approval from the College's Human Subjects Research Committee was obtained each year before data collection, and each candidate signed an informed consent form in order to participate in the project. The current paper is a follow-up to a preliminary report of this case study design published after one year of data collection (Ragland, 2008).

I used three methods for systematic data collection. The first was reflective surveys focused on the candidates' use of the instructional strategies administered at three stages of candidate development: at the beginning of the methods course; at the end of the methods course; and at the end of student teaching. A variation of the Concerns-Based Adoption Model (CBAM) originated by Hall, Wallace, and Dossett (1973) was used to survey candidates' levels of use (LoU) of the McRAH strategies (see Table 3 below). Artifact analysis was performed on all the lessons included in the three-week unit plan created for the methods course as well as on



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all lessons taught by the candidates during their student teaching experience to tally uses of McRAH strategies. Finally, one-hour interviews were conducted with all candidates shortly after the conclusion of the student teaching placement; these interviews examined candidates' overall philosophy of history teaching, their use of specific McRAH strategies, and their comfort with the use of the strategies. Responses were recorded in writing by the researcher. The complete interview protocol is found in Table 4 below.

Table 3. *Candidates Levels of Use (LoU)*

<b>Levels of Use (LoU)*</b>		
0	Nonuse	Little or no knowledge, no involvement, or use of strategy
1	Orientation	Have explored or is exploring the value and demands of using the strategy
2	Preparation	Preparing for first use of the strategy
3	Mechanical Use	Focusing most effort on the short-term, day-to-day use of the strategy; somewhat disjointed and superficial use
4	Routine	Use of the strategy is stabilized; few if any changes are being made in ongoing use
5	Refinement	Varying the use of the strategy to increase the impact on students
6	Integration	Combining own efforts to use the strategy with related activities of colleagues
7	Renewal	Seeking major modifications of strategies to achieve increase impact on students and explore new goals for self

\* Adapted from: Procedures for Adopting Educational Innovations/ CBAM Project, R & D Center for Teacher Education, The University of Texas at Austin, 1974.

Table 4. *Post Student Teaching Interview Protocol*

1. What primary sources are used in your classroom and how?
2. How often do you use primary sources?
3. How often are document based questions (DBQ's) used and how?
4. What historical artifacts do you use and how?
5. What does "doing history," mean to you?
6. How would you characterize your overall curriculum design in terms of organizational structure, i.e. thematic or chronological? Why and how was this decision made?
7. Describe any images, media, multimedia or technology that you incorporate into your classroom.
8. What community connections are you making in your classroom?
9. What materials have you used from the College Curriculum Collection? When? How?
10. What ideas have you shared with colleagues in your school and how? How were they received?
11. Summarize the use of McRAH strategies in your teaching practices.
12. How would you evaluate your comfort with the McRAH teaching strategies now compared to before the senior methods course/ before student teaching?
13. What specifically caused the biggest change in your teaching strategies over the last six months / one year?

The CBAM instrument consists of surveys designed to measure changes in practice as teachers adopt a new instructional system, in this case the McRAH strategies. Quantitative analysis of the LoU survey responses consisted of tallying response frequencies by rating for each listed item and rank ordering the items based on the tallies, as well as calculating percentages for each data field. Candidates selected the appropriate Level of Use (0-7) on the

survey for each strategy at each phase of survey administration. See Table 3 for the eight Levels of Use choices. For purposes of analysis, consistent use was considered to be a LoU rating of greater than 3 (routine use or above). Relevant data are reported in the Figures below.

Artifact analysis of lesson plans took the form of coding based on instances of use of the McRAH strategies being examined. Frequencies were tallied by each listed item and were rank ordered based on the tallies. Percentages for each data field were calculated. Coding took place after the conclusion of the course/student teaching and had no impact on candidates' assessments in the course itself. Relevant data are reported in the figures below.

The purpose of the culminating, in-depth interviews was to understand the experiences of the candidates and the meaning they made of their pre-service experiences. Analysis of open-ended interview responses involved organizing responses into categories that matched the data collection areas and selecting, refining and positioning each category generated in open coding to create linkages between the categories and then amalgamate them to fit a broader categorical structure. For example, in response to interview question #13, concerning what caused the biggest change in the candidates' teaching after fieldwork, responses fell into three general categories: real world experience; the Unit Plan assignment during the senior methods course; and a combination of theory and practice (see Table 6). Comparisons of the results for cohorts of candidates year to year were also calculated to document how effective the reflective teaching cycle was in continuing to improve student learning outcomes (see figures below).

Finally, it should be noted that data was triangulated by comparative analysis of survey results, artifact analysis from the methods courses Unit Plan, student teaching lesson plans, interview question responses, and observation of the candidates during student teaching. This provided evidence of progress and changes in teaching practice with regard to the McRAH strategies on which to base the analysis in this case study.

## Results

### **Research Question #1: Which research-based history instructional strategies (McRAH) were most and least implemented by the candidates?**

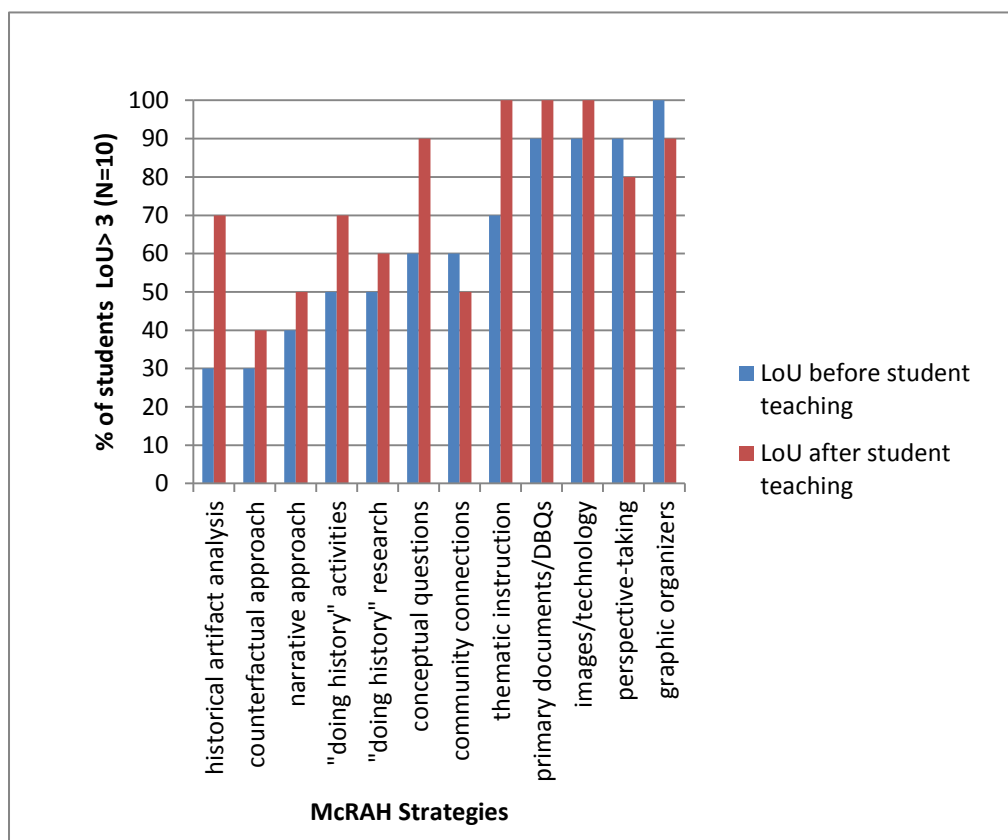
Overall, candidates demonstrated a strong implementation of the McRAH strategies in their lesson creation and delivery.

**Reflective surveys.** As measured by the Levels of Use (LoU) survey at the end of the methods course, at least 50% of candidates rated their use of nine of the twelve strategies a high level (routine or more = levels 4-7). The most used strategies were “doing history” classroom activities; “doing history” research assignments; conceptual questions to organize lecture materials; familiar, familial and community connections; thematic instruction; primary documents and Document-Based Questions (DBQs); images and technology; perspective-taking exercises; graphic organizers; and interactive note-taking and maps.

After student teaching, 50% or more of candidates rated their use of all strategies with the exception of the counterfactual approach as routine or more. Thematic instruction, primary

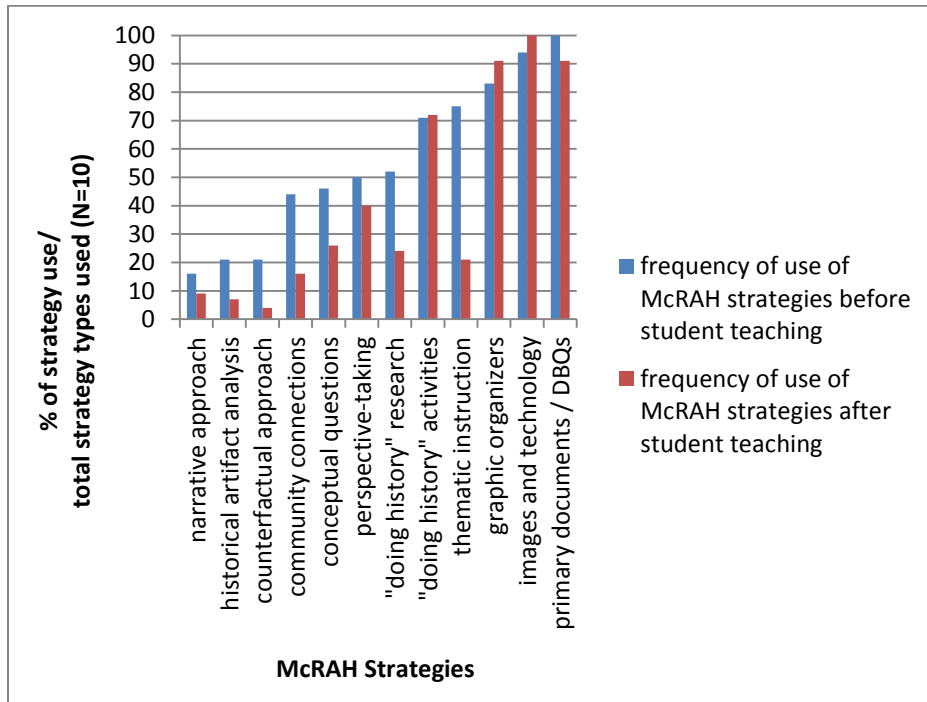
documents and DBQs, and images and technology were used by 100% of candidates. As mentioned previously, there was no requirement that student teachers implement any McRAH strategies by either the supervisor or the cooperating teacher. The choices of instructional strategies were made freely by the candidates. The least used strategies before student teaching, used by less than 50% of the candidates at the routine level or above (levels 4-7), were historical artifact analysis; counterfactual approach; and narrative approaches (see Figure 1). Data on changes in LoU from the “before class” to the “after class” (before student teaching) survey results did not provide significant data for further analysis, as the most significant changes in Levels of Use occurred in the interval from before to after student teaching.

Figure 1. *Level of Use of McRAH Strategies before and after student teaching*



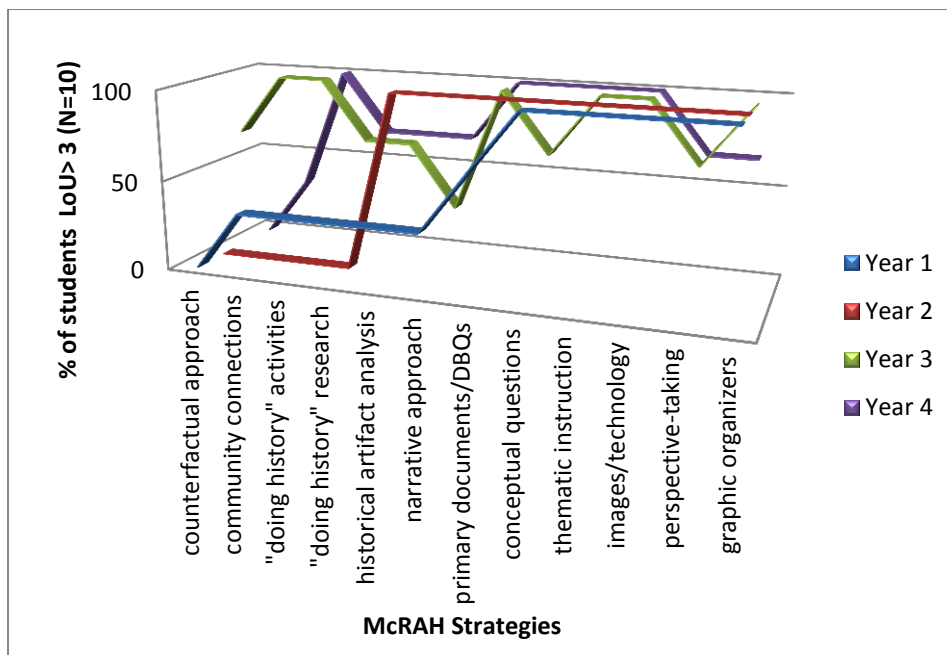
**Artifact analysis.** Based on artifact analysis of the use of the strategies in the course embedded unit plan and subsequent lessons during student teaching, the same three strategies—graphic organizers, images and technology; and primary documents and DBQs—were used most. The same four strategies—narrative approaches; historical artifact analysis; counterfactual approach; and community connections—were used least (see Figure 2).

Figure 2. Frequency of McRAH strategy use based on artifact analysis before and after student teaching



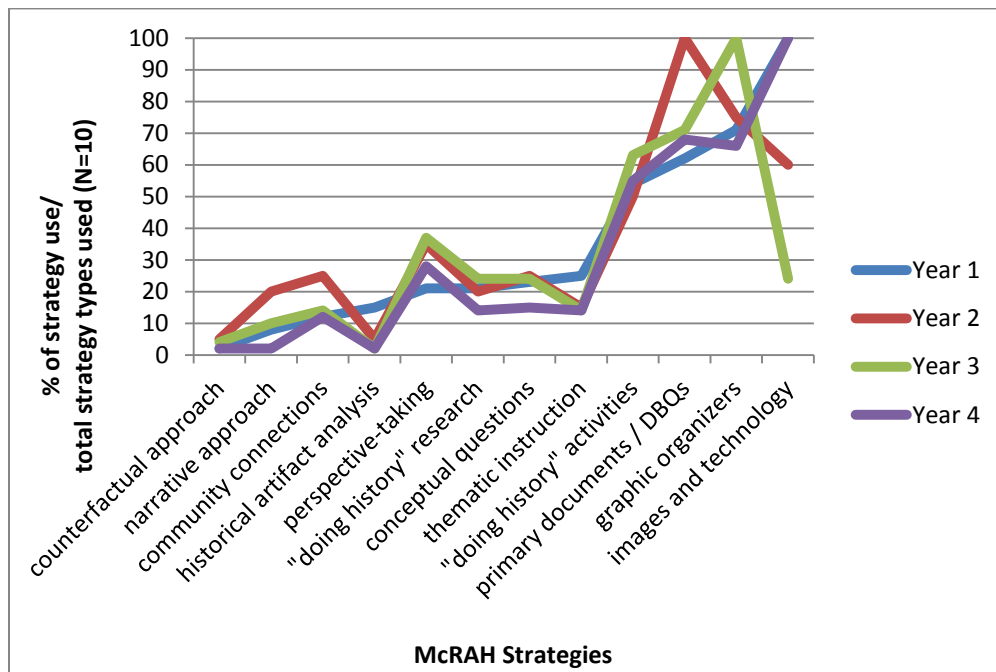
Examining the levels of use of the McRAH strategies during student teaching from year to year across the four cohorts reveals that more of the twelve strategies were generally put into routine use or above (levels 4-7) by each of the subsequent cohorts. In year four, there was a slight reduction in average use of all strategies (see Figure 3).

Figure 3. Level of Use of McRAH Strategies during student teaching (years 1-4)



Artifact analysis of the use of strategies during student teaching was also documented in a longitudinal manner over the four years of the project (see Figure 4). The results indicated an increasing use of the strategies in a consistent pattern over the years. Those strategies that were most and least used during student teaching remained similar across cohorts for the most part.

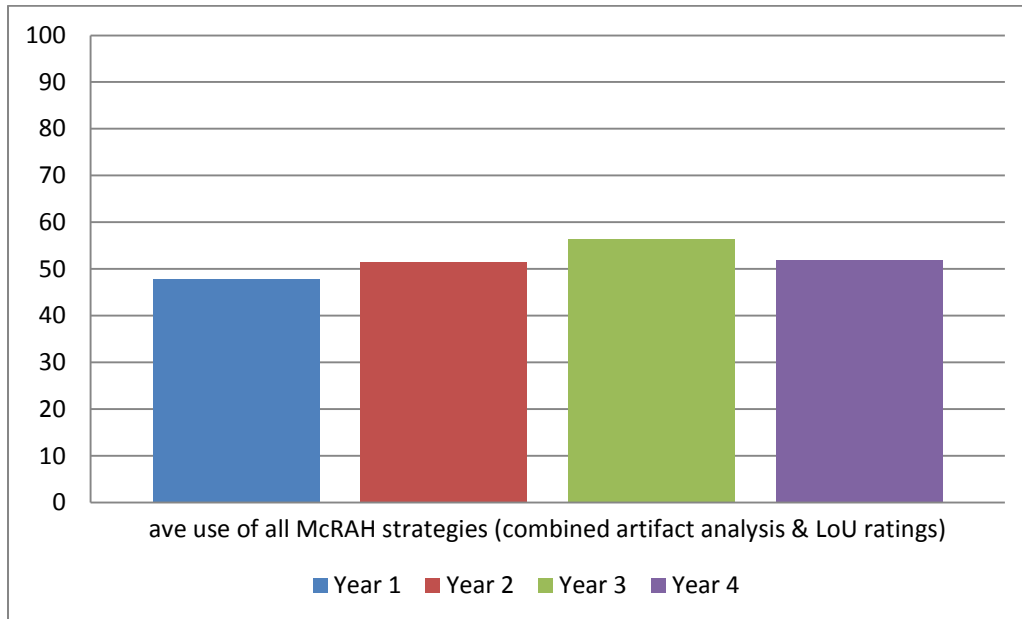
Figure 4. *Frequency of McRAH strategy use based on artifact analysis during student teaching (years 1-4)*



**Research Question #2: What impact did various pre-services experiences have on the implementation of the McRAH strategies over the course of four cohorts of candidates?**

Averaging both the Levels of Use ratings and artifact analysis for all McRAH strategies together revealed a general increase in use of all McRAH strategies across the years (see Figure 5).

Figure 5. Average Use of all McRAH Strategies (years 1-4)



According to the post-student teaching interviews with the candidates, the pre-service experience that had the greatest impact on increasing the use of the McRAH strategies (question 13) was the authentic experience of student teaching. The responses to questions 11, 12 and 13 from the interview protocol (Table 4) revealed the importance of putting theory into practice to solidify the candidates’ comfort with and use of the strategies. Seeing how high school students reacted to the use of the strategies, how student learning outcomes improved, and how students enjoyed using the strategies reinforced the candidates’ positive views concerning the McRAH strategies (see Tables 5 and 6).

Table 5. Interview Responses regarding Cause of Biggest Change in Teaching Strategies over Previous Year

What caused biggest change in your teaching since fieldwork (Q #13)	% of candidates responding (N=10)
<b>Real world application</b> (specifically, the environment of student teaching/ seeing how students reacted to the use of the strategies and how student outcomes improved/ and how students loved using the strategies)	80
<b>Senior seminar assignments</b> (specifically the Unit Plan)	20
<b>Combination of strategies</b> (theory & balance of reality of classroom)	10

Table 6. *Interview Responses on Overall Use of McRAH Strategies in Student Teaching*

<b>Overall use of McRAH strategies in student teaching (Q #11)</b>	<b>% of candidates responding (N=10)</b>
Using a variety of strategies for good history teaching	80
Students doing history is embedded in my philosophy of teaching history	60
Unconsciously used them often—when looking back, I realized they were used	60
Used as a jumping off point for own interpretation	10
I just think of it as “professor’s advice on how to teach history”	10
I do more “doing history” assignment, primary document analysis, and less textbook work than my colleagues	10

Interview responses from candidates reinforced their enthusiasm for use of the strategies. Candidates responded that [use of the strategies is] “easier now because I know how to use them, including intellectually why they work”; “I understand their value and how to use them effectively in actual practice”; “They are ingrained in my practice”; “The [strategies] became practical, not just theoretical, e.g. jigsaw, DBQ”; “I used them often – when looking back, I realized they were used”; and “Student outcomes improved compared to the more teacher-centered methods of my CT.”

While the cooperating teachers were not aware of the study, nor had they been prepared to teach using the McRAH strategies, the candidates did share ideas with their colleagues in their student teaching placements. According to the responses to interview question #10, candidates shared various strategies with their colleagues (see Table 7), and while many strategies were shared, the use of images, media, multimedia, and technology as sources for historical interpretation was the strategy most often subsequently put into practice by the teachers. For example, one candidate indicated that he had shared a Webquest he created with his cooperating teacher, and the teacher later used it in his other classes. Another candidate indicated that she helped her department learn to use Moodle, something she used at the college and newly adopted by the high school. She also shared how to use the “magic board” (a technique she had learned in her methods course that helps students focus on small images within a larger image projected on a screen) with the Social Studies Department, and it was well received.

Table 7. *Ideas Shared with Colleagues during Student Teaching*

<b>Ideas Shared with Colleagues during Student Teaching (Q#10)</b>	<b>% of candidates responding (N = 10)</b>
Instructional strategies - Perspective taking/scenarios/role plays/ jigsaw/ Magic Board/ DBQ organizer	80
Technology – Moodle/ Webquests/ PowerPoints	50
Working collaboratively	40
Curriculum projects	30
Management strategies	10
Test	10

**Research Question #3: Using evidence from measuring changes in students' implementation of the strategies, how did outcomes match the goals set in the teaching-research-teaching and reflective teaching cycles of course redesign?**

Based on the increasing level of use of all the McRAH strategies through the developmental stages of the study, the goals of the course redesign were largely achieved. Students were able to create lessons and units of study incorporating the history teaching strategies (McRAH) taught in the course and demonstrate the strategies in practice teaching lessons. They were also able to explain the key concepts of history pedagogy in course assignments, including the unit plan rationale, and through their implementation of the strategies. The patterns remained largely consistent over the four years of data collection. The candidates' patterns of adoption of the new strategies were similar to the patterns previously demonstrated by the in-service teachers' behavior in the original research that constituted the first stage of the research-teaching-research cycle and formed the basis for the course redesign.

### **Discussion and Conclusions**

#### **Use of McRAH Strategies**

The McRAH strategies put into practice most often by the candidates (see Figures 1 and 2 above) were those strategies that most actively and directly engaged their students with historical documents and the historical thinking process that had been demonstrated during the methods course. These strategies included the use of primary documents, DBQs, images, technology, and thematic instruction. Use of nine of the twelve McRAH strategies increased from before to after student teaching. Artifact analysis of the use of strategies in the course-embedded unit plan and lessons during student teaching also revealed the same three strategies being used the most: graphic organizers, images and technology, and use of primary documents and DBQs. These strategies again reflect the most active and direct engagement of the students with historical materials, and also reflected triangulation of multiple data sources.

The strategies that decreased in reported use according to the LoU (see Figure 1) were community connections, perspective-taking, and graphic organizers. Each of these decreased by 10%, which represents only one student using them less often during their authentic student teaching experience compared to their use in the model unit and lesson plans created for the methods course. In addition, those strategies used slightly less often were already at a high level of use (60-100%), so the decrease still represents a high percentage of candidates using them at a routine or greater level (LoU rating 4-7). The strategy that was used least, the counterfactual approach, was the one not demonstrated as often in the methods course (see Table 2) and/or not used by the candidates' cooperating teacher mentors during student teaching. The decision not to demonstrate the counterfactual approach was based on time limitations. I had to make a decision about which strategies to focus on, and the knowledge that this was one of the least used strategies by the in-service teachers in my previous research helped me make this decision. The strategy that was not as strongly supported in the preparation of the candidates was used least by the candidates.



Triangulating the data analysis between LoU ratings and artifact analysis revealed alignment in most cases between the reported use of the strategies in the LoU survey and the actual use in the course-embedded unit plan or during student teaching. There were small differences in the use of some strategies. “Doing history” activities and research was used more in the actual unit plans (ranked 7 and 8/12) compared to a lower LoU rating (ranked 4 and 5/12) in student teaching. The assignment for the unit plan recommended students use doing history activities, and required a DBQ for the final cohort, so the candidates may have actually used more than their reflections in their LoU surveys indicated.

### **Impact of Pre-service Experiences**

Students reflected that the most authentic experience before student teaching was creating the model unit plan during the senior methods course. However, candidates reported that the real world environment of student teaching caused the biggest change in their teaching during the last year of the program (see Table 6). The final authentic experiences enabled an increase in their use of the McRAH strategies.

### **The Reflective Teaching Cycle**

Post-student teaching interviews with candidates reinforced that candidates had incorporated the explicit McRAH strategies as well as the general idea of active engagement of “doing history,” such as historical analysis and historical thinking, with students (see Table 5). They most often used a wide variety of primary sources, mostly government documents, images, speeches, and literature. Candidates reported that their students were actively doing the analysis of primary documents, usually analyzing them with a specific prompt or protocol provided by the candidate, as they had learned in their methods course (see Table 2). Most students included a DBQ in their student teaching, even though there was no requirement from either the cooperating teacher or supervisor to do so, and all said they plan to use them in the future. Historical artifacts were not used often; at this early stage of their careers candidates haven’t built up their own collection of resources, and many cooperating teachers didn’t make them available to candidates due to their lack of use of artifacts as well. Significantly, use of the narrative approach increased over the first three years of the study from 33% to 100%. This was due to a conscious effort to introduce it more explicitly during the methods course based on the reflective teaching cycle, using the data that indicated a low level of use of this particular strategy in earlier cohorts.

In conclusion, to a great extent, those strategies that tended to be adopted and maintained were those that were explicitly introduced by the instructor and practiced by students during the methods course and were therefore easiest for students to implement directly into their own individual classrooms. Candidates also tended to implement most often those strategies that did not require many additional resources that were not readily at their disposal in the student teaching placement, such as historical artifacts, which the cooperating teachers generally didn’t use. Based on my previous research with in-service teachers, cooperating teachers who had not been prepared to use the McRAH strategies most often do not use the counterfactual or narrative approaches. The lack of modeling by the cooperating teachers could have been another contributing factor to those strategies being used less by the candidates. Those strategies that were implemented to a lesser extent were also those that were not as explicitly demonstrated or modeled during the methods course. The lack of

demonstration and modeling during the course was based on my previous research with in-service teachers and their relative lack of preference for these strategies in their classrooms.

In essence, these adoption patterns mirror those of the in-service teachers whose work was the subject of the first stage of the research-teaching-research cycle (Ragland, 2007a, 2007b, 2008). Elements of the new course design that were taken from successes in the in-service project included direct modeling of best practices strategies; improved collaboration with an historian to create more authentic unit plans; greater opportunities for practical application of the strategies; and improved feedback and higher standards expected for implementation of strategies (Ragland, 2008).

The benefits of the reflective teaching cycle, including the steps of SoTL research outlined by Huber and Hutchings (2005), were illustrated in this study. First, framing questions about student learning based on previous scholarly research and authentic observations from clinical experiences served as a catalyst to the research. Second, methods were devised to gather and explore evidence on these questions. The use of a recognized teacher education research tool such as the CBAM process along with artifact analysis served to provide sound evidence from which to draw conclusions about candidate learning outcomes. The methods were also appropriate to the discipline, as the use of small case studies and content analysis of artifacts of practice are frequently used methods in teacher education research. Third, new insights based on my previous research enabled me to refine my classroom practice. For example, when data revealed that the narrative approach was not being used at a high level (33%) in year one, more explicit modeling was added to the curriculum. This resulted in 100% use in years two and three. This process clearly showed the effective use of the reflective teaching cycle for course redesign and my own work as a teacher educator, as well as the importance of modeling reflection to students as a part of best practices in teaching and teacher education.

### **Implications and Recommendations**

The value of the extended research-teaching-research and reflective teaching cycles has been supported by this study. This is an objective way to create and measure the success of a course, including the importance of incremental and explicit instruction to achieve student learning outcomes. The process reinforces the importance of documenting all teaching practices so that opportunities for systematic research and reflection are available. Consciously embedding your scholarly research into your curriculum, as well as gathering evidence of the success of goals to use for reflection and future modification of teaching, are shown to be beneficial.

Curriculum design for this case study involved determining appropriate disciplinary knowledge, and the process documented is therefore applicable to any discipline. Faculty can define the authentic disciplinary knowledge in their disciplines and the changes they want to see in student learning outcomes in order to apply the evidence-based reflective cycle. In this way, teaching can inform research by its demand that ideas be clarified and presented in an accessible fashion that acknowledges the perspectives of candidates. The intersection of knowledge on the research-teaching connection, reflective practice, and discipline-specific SoTL will prove valuable in reflecting on the process of course redesign and implementing the evidence-based reflective teaching cycle.

Applying this cycle will help determine an area of teaching to explore and thereby determine what evidence to collect. Discipline-specific strategies and methods of inquiry will vary as do the methods of teaching candidates to understand the substance and syntax of diverse fields. However, some general principles do remain that hold across problems, topics, issues, and domains (Huber & Morreale, 2002). The process of thinking about your discipline and what the fundamental practices are for that discipline can be undertaken in any field. For example, research showing the value of lab experiences in science teaching and learning can be used to develop a methods course curriculum in which science teacher candidates engage in lab experiences. This will enable candidates to develop the confidence and belief in the efficacy of lab experiences that they are more likely to subsequently implement in student teaching. Similar ideas, such as the use of manipulatives in mathematics instruction, can be embedded in that discipline-specific course. Each discipline can embed appropriate research-based practices in course design and appropriately measure whether the candidates are implementing the desired practices.

### **Limitations and Future Research**

While this study has provided significant, evidence-based conclusions and suggestions for course design, there are limitations that must be acknowledged. Although the case study was small in size, the trends of the results are worth sharing, and it is important to continue this work even with these limitations and encourage scholars in other fields to apply this model with larger populations.

In addition, further consideration of the impact of the context of the student teaching setting and its impact on the candidates' implementation of strategies taught in the methods course should be explored. This may be an important factor in terms of the extent to which candidates implement the research-based strategies they learned. A cooperating teacher's support or lack of support for a particular instructional strategy could significantly impact its use by a student teacher. Since I was able to supervise all but one of the student teachers and was able to observe all of them student teach on multiple occasions, I am confident that they were indeed implementing the strategies during student teaching. I consulted with the cooperating teachers as well to get a sense of their support for the use of the strategies learned in the methods course. More formal research with the cooperating teachers was beyond the scope of this study, but it would be a worthwhile endeavor for future research.

It is not the case with all teacher educators that they are able to teach methods courses and supervise clinical experiences. This is an important element to bring needed confidence in the results and conclusions of this work. A further step that would add to the literature in this field would be a study that involved continued observation of the candidates into their teaching jobs over a period of years. This would enable us to draw conclusions about whether the teachers continued to implement the strategies throughout their careers and if the context of their teaching and the support they receive in their schools impacts their choices. This lack of available follow up is a common issue in teacher preparation. Being able to observe the candidates during student teaching as I did is an attempt to mitigate this limitation, at least during the pre-service phase.

In general, the importance of evidence-based reflection for drawing valid conclusions on the improvement of teaching and course design has been demonstrated in this study. Collecting specific data can better inform ongoing redesign, as compared to informal teacher reflection which could be inaccurate. Using both quantitative and qualitative data can be effective. The research-teaching-research and reflective teaching cycles can help one's teaching become more effective and student learning to be more significant and enduring.

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