Video Reflections: Developing a Personal Teaching Philosophy Through VideoPaper

Abstract

The proposed study will investigate the effect of a new multimedia technology, known as a VideoPaper, on the development of reflective ability in preservice teachers. A VideoPaper combines the use of digital video – now common in preservice programs – with written annotations, so that a preservice teacher may write an analysis of a video of a personal teaching experience and share this analysis with peers and faculty in their program. While self-reflection is widely acknowledged as a powerful attribute of an effective practitioner, it has traditionally been difficult to measure the degree to which a teacher has developed an ability to reflect. This study proposes to measure reflection by defining it as the ability to articulate a personal philosophy of teaching in an interview with professors of education. A randomized experimental design will be used to separate a cohort of 40 preservice teachers into an experimental group, who will complete a reflection assignment using the VideoPaper software, and a control group, who will complete the assignment using only video and traditional essay-writing skills. Both groups will participate in pre-post videotaped semi-structured interviews with pairs of education faculty, who will give a written assessment of the preservice teacher’s ability to articulate the beginnings of a personal philosophy of teaching. This longitudinal study will take place over 4 months in the spring semester of the one-year master of arts in teaching (MAT) program. Follow-up research is also proposed for the subsequent five years of the teachers’ careers. The results will be submitted for publication and presented, along with digital video and writings from both groups, at conferences on teacher education and technology in education.
Primary Research Question

The proposed study is concerned with investigating the effect of using a new multimedia technology, known as a VideoPaper, on the development of self-reflection in graduate level secondary school preservice teachers. The study proposes to explore the use of the VideoPaper as a tool for enabling deeper reflection in the context of a pre-existing self-reflection assignment. The research question is: *to what extent can VideoPaper serve as a useful medium to help preservice teachers develop a personal philosophy of teaching?*

Research Goals

The primary research goal of the proposed study is to discover the degree to which creating video-based teaching cases using the VideoPaper Builder (VPB) software aids in the development of reflective ability in teachers in training. The secondary research goal is to discover how many of the preservice teachers who used the VPB are still teaching in the classroom after five years. If the research confirms that those preservice teachers who use the software to articulate the beginnings of a personal teaching philosophy are recognizably more reflective about their teaching experiences after using VPB, it will help to identify a specific practice that enables greater reflection in teacher education. If a statistically significant percentage of this original preservice population is still teaching in the classroom after 5 years, it will lend strength to the correlation between the development of reflective practice and teacher longevity.

Rationale

The 2003 report by the National Commission on Teaching and America’s Future (NCTAF) sounds an alarm: there is a crisis in teaching and teacher education. The
NCTAF calculates that there are approximately three million Americans who were trained to teach who are not currently teaching (NCTAF, 2003). Less than 20 percent of this attrition is due to retirement (Henke et al., 2000; Ingersoll, 2001, cited in Darling-Hammond, 2003). The conclusion the NCTAF draws is striking: this epidemic is not so much a problem of teacher shortage, as it is of teacher distribution and retention. Moreover, teacher attrition is not distributed equally across communities. It has been shown that teacher turnover is 50 percent higher in high-poverty than in low-poverty schools (Ingersoll, 2001, cited in Darling-Hammond, 2003).

The damage done by this attrition is tremendous. Because teachers do not typically reach levels of greatest impact on student learning until their fifth year, our nation’s schools are losing the next generation of educators before they reach their potential. Taken alone in simply financial terms, the loss of teachers also bears a great cost. For example, the South Texas Center for Educational Research estimated that each teacher that leaves the profession during the first three years of teaching likely costs the state of Texas $8,000 (Eberhard et al., 2000).

In addition to other factors, such as lack of support, low salary, and lack of participation in decision-making in the workplace, the NCTAF report recognizes teacher preparation as a key area where improvement is needed. The report suggests that one aspect of adequate teacher preparation is the development of an ability to reflect. To “reflect,” in this case, means to think about and to learn from experience. The implication of this report is that the nation’s teacher education programs must provide better training to enable teachers to learn from their practice. Teaching, like other clinical practices, requires knowledge-in-practice, cognition that is situated in classroom experience.
The challenge of implementing practices encouraging reflection in teacher education would be considerably lessened if there were a shared understanding of what these are. While the terms “self-reflection” and “reflective practice” have gained wide recognition as essential components of strong teacher education programs, it has been difficult for researchers to relate them conclusively with specific activities or assignments in preservice education. What precisely produces reflection and in what measure is it produced are two important questions articulated in the research (Jay & Johnson, 2002). As Dinkelman (2000) concludes from a study of the development of self-reflection in three secondary level preservice teachers, “[t]he development of critically reflective teaching in preservice teacher education is very much an open question” (p 221).

Primary Constructs of Interest

In the modern era, John Dewey is one of the most influential of reflective theorists. Dewey’s description of reflection in *How We Think* (1933), still appears today as one of the most widely cited explanations of the kind of thinking that is of greatest benefit to teacher educators:

*Demand for the solution of a perplexity is the steadying and guiding factor in the entire process of reflection… The function of reflective thought is, therefore, to transform a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, coherent, settled, harmonious.* (pp. 14, 100-101)

Using Dewey’s definition, one recognizes in a reflective thinker the willingness to acknowledge and thoughtfully encounter what is problematic in their experience of practice. Reflective ability is brought to bear on the perplexing and the obscure so that the thinker may bring order and resolution that informs subsequent practice. This reflective
activity repeats continually over time, with each new experience being broken apart and reassembled with a new and informed perspective.

Experiences in teaching are complex; gauging the degree to which someone is able and willing to learn from these experiences involves individual and involved examination of the circumstances of their learning. Russell (1993) argues that reflective teaching can best be assessed through observation of teacher practice and individual conversation with teachers about their understanding of their practice. I agree completely that the value of any assessment of reflection depends upon paying close attention to the individual teacher. But if we are to address problems that are as widespread as the NCTAF (2003) suggests, we must make an attempt to broaden our perspective in order to arrive at solutions that are widely effective. A first step in this direction is to validate methodologies that can be replicated on a larger scale. Validation of this sort demands randomized experimental design that produces quantitative (as well as qualitative) data.

In order to arrive at such a design, I propose to draw a connection between a teacher’s reflective capacity and their ability to articulate a personal philosophy of teaching. Because the target population for this research is preservice teachers, I do not expect that participants will have arrived formulated a complete philosophy of teaching and learning. I propose to study the degree to which they have begun to form a philosophy, as one significant indication that they are on their way to becoming reflective practitioners. In this case, I wish to create a correspondence between the notion of “ability to articulate” and what Bers (2003) terms “narrative fluency” – the ability to tell one’s own story. The story that I hope to hear told in this case is the beginnings of a personal philosophy of teaching. I argue that identity formation in preservice teachers is
no less significant in its long-term effect on their professional growth than Schank’s (1990) description of storytelling in the context of identity formation in teenagers. Teenagers need time and opportunity to learn how to tell the story of themselves to peers and mentors. The same, I believe, is true of teachers new to the profession. I hypothesize that a preservice teacher who has demonstrated during her teacher training that she has begun to form a professional teaching identity is less likely to leave classroom teaching than one who has not.

Methods

Prior to participating in the study, all preservice teachers will complete a brief screening questionnaire that will ask them their intentions upon completing the teacher education program. One of the goals of the research study is to gauge the effect of this technology on their personal philosophy; a related strand of inquiry is the longevity of these teachers in the classroom. If this is to be measured, it is important to assess prior to the start of the study that the intention of the preservice teachers is, in fact, to teach in a classroom.\(^1\) Any preservice teacher who does not intend to teach in the classroom will still participate in the study, but their results will be flagged for exclusion.

The research will proceed in two stages:\(^2\): stage one takes place during the preservice year; stage two takes place during the following five years of the teacher’s career. In year one, preservice teachers involved in the study will participate in two semi-structured interviews with faculty from another university Department of Education in the Boston area. As qualified experts in the field, education faculty are familiar with

---

\(^1\) Placement rates for those Tufts graduates who do want to teach in a classroom has been 100% for the years 2000-2004. Therefore, I believe it is a fair assumption that any graduate wishing to teach in a classroom will find such a position.

\(^2\) See “Research Design” for more detail.
preservice teacher education communities and the context in which these study participants are gaining classroom experience. In order to prevent possible favorable bias on the part of the interviewers, I am choosing to have the interviews conducted by faculty from a university other than Tufts. In addition, the use of two faculty interviewers in each interview should produce a high degree of inter-rater reliability. The first interview will take place at the start of the spring semester, prior to their participation in the VideoPaper intervention. The second will take place at the end of the semester, after the intervention.

Each 20-minute interview will follow the same format: two faculty will conduct the interview with the preservice teacher; questions will be asked alternately by each faculty member; during the interview and at the conclusion the faculty will be asked to assess the degree to which the interviewee articulated a coherent personal philosophy of teaching on a scale of 1 to 5, 1 being the least articulate and 5 being the most. The questions ask the respondent to refer to specific teaching experiences for examples that will help them to articulate their philosophy of teaching. Question 3 asks directly for the respondent to describe their philosophy of teaching. The question offers a prompt, inspired by Hawkins’ (1974) notion of the “wild triangle” of teacher, student, and curriculum, that may help the respondent orient their response with respect to these three universal actors in the teaching experience.

The faculty will be blind as to whether the interviewee has completed the self-reflection assignment using the VPB software. Because the goal of the research is not to explore spontaneous articulation but development of reflection over time, there is no need to hide the interview questions from participants; they will be provided with a copy of the

3 See Appendix A for the format of the questionnaire.
interview questions 48 hours in advance of each interview. Both the pre- and post-interviews will be videotaped and transcribed.

In years two, four, and six, participants will be asked to complete an online questionnaire that will verify that they are still teaching in a classroom setting. They will also be asked to submit electronically answers to the same questions from the original face-to-face interviews. Two education faculty will serve as reviewers, reading the answers and performing the same assessment on a scale of 1 to 5.

Population Sample

The population sample for this study will be the secondary level teachers in the graduate-level teacher education program at Tufts University, a mid-sized university located in Medford, Massachusetts, a Boston suburb sometimes referred to as an “urban-rim” community. The Tufts University Department of Education is a small, graduate-only department of approximately 120 students per year, 35-45 of whom are enrolled in the Teacher Education Program. The Program offers a one-year graduate program consisting of two semesters and two sessions of summer courses. Graduates receive an MAT and Massachusetts certification in their discipline.

Research Design

Both groups of preservice teachers will complete assignments designed to develop reflective ability based upon teaching experience. A self-reflection assignment already exists in the Department of Education at Tufts University. It will be adapted into two strands for the purpose of this study. Preservice teachers will be randomly assigned to one of two groups: Group A, the control group, will complete strand 1, which includes the production of a digital video and a self-reflection paper; Group B, the experimental
group, will complete strand two, which includes the production of a digital video and a self-reflection paper, but also uses the VPB software to unify the two as a VideoPaper.

Description of the Technology

Originally conceived in 1998 through a National Science Foundation “Bridging Research and Practice” project (NSF # 9805289), VideoPaper was designed to enable researchers to collaborate with practitioners through video. The format of VideoPaper is a presentation of text and video side by side, allowing authors to annotate digital video.

![Figure 1: Screenshot of published VideoPaper](image)

The video footage is supplemented by the use of still images captured either from the video itself (e.g. notes the teacher has written on the blackboard, a student’s facial expression), scanned content (e.g. student work, teacher handout), or other digital images of interest (e.g. explanatory diagrams, graphics).
VideoPaper is interactive in two directions: a reader can choose either to read the
text and click on the author’s “PLAY” buttons installed within the text that trigger
selected clips of the video, or to watch the video and click on the “link-to-text” buttons
that appear within the video, directing the reader to selected pages of related text. The
ability to link raw data and video with text analysis and observations enables the “reader”
to interact with the content in a way that is very different than reading a traditional linear
text.

The reader becomes a participant who can control how the text is read. A reader
can select pages to view, watch and analyze pieces of video data, pause and expand time,
experiment with other interactive content (available in the form of Java applets), and
conduct further research by following the hyperlinks. Authors create html documents that
become text sections, gif or jpeg files that are used as slides, and a Quicktime or MPEG
file for the video. VideoPaper Builder generates javascript menus, html links, framesets,
and Quicktime image slide shows in order to interconnect the author’s video, slides, and
text into a single multimedia presentation. The final product (see Figure 1) is viewable in
Mac or Windows, displayed using an Internet browser such as Internet Explorer or
Netscape Navigator.

Data Collection

Both qualitative and quantitative data will be collected: quantitative data through
the faculty assessments; qualitative data through written comments by faculty and
analysis of the interview transcripts. Data will collected in two stages over six years, as
described in the table below.
<table>
<thead>
<tr>
<th>Stage</th>
<th>Year</th>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preservice year</td>
<td>Interview transcripts; interviewer notes (Pre-intervention)</td>
<td>Interviewer assessment (Pre-intervention)</td>
</tr>
<tr>
<td>1</td>
<td>Preservice year</td>
<td>Interview transcripts; interviewer notes (Post-intervention)</td>
<td>Interviewer assessment (Post-intervention)</td>
</tr>
<tr>
<td>2</td>
<td>Inservice year 1</td>
<td>Electronic submission of written answers to interview questions</td>
<td>Reviewer assessment</td>
</tr>
<tr>
<td>2</td>
<td>Inservice year 3</td>
<td>Electronic submission of written answers to interview questions</td>
<td>Reviewer assessment</td>
</tr>
<tr>
<td>2</td>
<td>Inservice year 5</td>
<td>Electronic submission of written answers to interview questions</td>
<td>Reviewer assessment</td>
</tr>
</tbody>
</table>

**Data Analysis**

Written data, such as the faculty assessments, will be analyzed blind to the identity of the participants, whose names will be replaced by a five-digit identification number. The interview videos will be transcribed by graduate students unaffiliated with the study. They will issue each transcript a corresponding five-digit number.

A first reflection value, the average item value of the pre-intervention interviewer, will be calculated for each preservice teacher; a second reflection value will be calculated from the post-intervention interviewer score. The composite dependent variable REFL – change in reflective ability – will be calculated for each preservice teacher by taking the difference of the pre- and post-intervention reflection values. There will be a small number of preservice teachers participating in the study (n is likely to equal 40 or fewer). Statistical significance will be determined by a change of greater than 5% in the pre-post REFL scores. Positive values of REFL will indicate increases in preservice teachers’ reflective ability correlated with the intervention. Negative values will indicate a decrease in teachers’ reflective ability. Zero will indicate no change. A qualitative analysis will be performed on the responses that participants give to the interview questions, focusing on
their responses to questions regarding their formation of a personal philosophy of teaching. Discourse analysis (Cazden, 2001) will be used to qualitatively analyze the transcripts of the interviews.

Deliverables

I will publish findings from the research after years 1 and 6. Results from year 1 will indicate preliminary success in differentiating respondents from Group A (control) from those in Group B (experimental). If the study proceeds as designed, results from year 6 will offer a clear indication of the degree to which the VideoPaper Builder software has affected the development of reflection in preservice teachers; results should also indicate how many of the original cohort remained in the classroom, and of those, how many were preservice teachers who completed the reflection assignment using VideoPaper Builder. Depending on the degree of success of the study, I will publish examples of video-based projects from both Group A (non-VPB) and Group B (VPB). These examples may prove to be enlightening as evidence of the kind of thinking produced by preservice teachers who are in the process of developing successful reflective perspectives on their teaching. The examples may be published through monograph editions of journals such as Teaching and Teacher Education, or on the Internet. I will also present at national and international conferences in education and educational technology, such as the American Educational Research Association (AERA).
Appendix A: Questionnaire for Pre-Post Interviews by Faculty

Instructions: Please circle the number that most closely corresponds with your assessment of the degree to which the interviewee was able to articulate a response indicative of a coherent personal philosophy of teaching. Please add any comments or notes where appropriate.

1=least articulate 3=moderately articulate 5=fully articulate

Interview Questions

1. Please describe an episode from your teaching experience that taught you something about your beliefs as an educator.

   1   2   3   4   5

2. Please describe an episode from your teaching experience that was particularly perplexing or caused two of your teaching beliefs to come into conflict. Describe in as much detail as possible what was in conflict. Give examples from the experience.

   1   2   3   4   5

3. Please describe your philosophy of teaching. It may help you to think of this in terms of your understanding of the relationship of curriculum, teacher, and student.

   1   2   3   4   5
References


