

Using Web-based Journaling to Encourage Reflective Learning in an Alternative Certification Program for Career and Technical Teachers

Janet Z. Burns, *Georgia State University*
Donna Wolosin, *National University*

Abstract

Journal writing is a common technique used to engage student teachers in reflective practice. Recently, “blogging,” a contraction of the term “web-logging,” and other personal web publishing technologies have gained attention in the realm of individual reflection. However, there is a void in career and technical education (CTE) research regarding the use of web technology for reflective thinking. The purpose of this study was to explore the potential of blogs as mediums for reflection for new CTE teachers enrolled in an alternative teacher certification program. The results revealed that 77.1% of the respondents perceived that taking part in the blog improved their ability to think about and analyze their beliefs. Furthermore, 91.5% felt that participation in the blog created a sense of community and support. In addition, analysis of the data indicated a relationship between the felt sense of community and support and perceived success in the student teaching practicum and teaching profession.

Introduction

Engaging CTE teachers enrolled in an alternative teacher certification program to think about their educational practices can be a challenge because instruction time available for reflection is at a minimum (Burns & Schaefer, 2002a). The challenge seems to increase when the teacher candidates are asked to reflect outside of structured class time. However, like teachers of other disciplines, new CTE teachers need to be able to associate thought with action as they attempt to work out the challenges of taking on new professional identities. Introduced by Schon (1983, 1987), reflective practice is considered an advantageous process in improving performance in a specific discipline and has been infused in teacher education programs for a variety of reasons. For example, it has been reported that reflection can enable new teachers to rethink their own histories in school; to articulate and sort out their prior beliefs and assumptions about teaching, learning, students, and content; and to examine their own practice critically as they transition toward pedagogical thinking (Burns & Schaefer, 2002b; Calderhead, 1992; Griffin, 2003; Valli, 1992). To date, journal writing has been the most common method employed for the development of reflective thinking. During the past 10 years, the World Wide Web and its contexts for learning have been incorporated into the everyday lives of teachers in many different ways, including the opportunity for use in reflection (Greenhow, Robelia & Hughes, 2009).

This study is framed by previous research about teacher reflection, beginning with the work of Dewey and Schon, which supports the assumption that reflective thinking is a beneficial practice for teacher growth and development. We next embraced the work of Brookfield, who hypothesized that the optimal means for encouraging reflective teachers is within communities of peers. Unlike the first generation of the World Wide Web, the expanded capabilities of Web 2.0 have recently created a new environment for dialogue and community building via blogs and other types of computer mediated dialogue (CMD). The opportunity to investigate journaling,

and ultimately reflective thinking, through the use of blogging was appealing. Could reflection and having a sense of community occur simultaneously in a CTE teacher education program? Consequently, this exploratory study was necessary to begin examining this question. There are no apparent studies that investigated this train of thought.

Theoretical Framework

Reflective Practice in Teacher Education

The conceptualizations of reflective practice in teacher education are numerous and varied. The general concept of teacher reflection stems from the work of John Dewey (1910/1991), who encouraged teachers to examine their underlying rationales for their choices and decisions. Extending Dewey's work, Schon (1983, 1987) outlined two types of reflection for professionals: reflection-in-action (considering an incident at the moment of the experience) and reflection-on-action (thinking about an incident after it has occurred). Dewey's and Schon's conceptualizations of reflective thinking have been described by Wade, Fauske, and Thompson (2008) as a "focus on framing problems from multiple perspectives and using all available data in seeking and evaluating solutions that are proposed or tried" (p. 403).

Valli (1997) synthesized Schon's work and categorized five levels of reflection in a hierarchical order. The first or lowest level, technical reflection, focuses on the application of teaching skills and techniques. At the technical reflection level, teachers are provided criteria and given specific directions and then asked to reflect upon how they are doing against the criteria. The second level, reflection-in-action and reflection-on-action, requires teachers to look back on events and experiences and think about them critically. Next, personalistic reflection focuses on personal growth and relational issues. Level four, deliberative reflection, focuses on decision-making after gathering and analyzing evidence. The highest level of the hierarchy is critical reflection. At this level, teachers examine ethical questions and relate ethical criteria to the goals and processes of education. Valli suggested that the different levels of reflection should be taught and used in combination with one another to help teachers develop full reflective capability.

Sparks-Langer, Simmons, Pasch, Colton, and Starko (1990) distinguished among seven types of reflective thinking used by teachers, while LaBoskey's (1993) framework of reflection identified three stages: common-sense thinker, alert novice, and pedagogical thinker. Jay and Johnson (2002) extended Schon's work by including reflection-for-action (the desired outcome to guide future action). Six types of reflection—technical, descriptive, dialogic, critical, evaluative, and personal—were identified by Kaplan, Ruple, Sparks, and Holcomb (2007).

While the literature offers different models and levels of reflection, common elements of reflective thinking include understanding a situation from multiple perspectives and questioning assumptions, routines, explanations, and rationalizations (Loughran, 2002). Bartell (2005) pointed out simply that, "to be reflective about what one is doing is to give that act some thoughtful consideration rather than to perform it in a routine and unexamined way" (p. 116).

Many teacher educators believe that the optimal means for encouraging reflective teachers is within communities of peers (Brookfield, 1995; Brookfield & Preskill, 2005; Grossman, Wineburg, & Woolworth, 2001). While teacher candidates work together on group

projects, discuss ideas, and reflect with one another in their classes on campus, the opportunity to reflect with others may be more challenging to orchestrate when they are enrolled in their field experiences and are away from campus. This may be even more difficult for CTE teachers in alternative programs whose “field experiences” are their actual “jobs” and who are taking on more responsibilities than a student teacher in a pre-service teacher education program.

Once a decision is made to incorporate reflective activities into a CTE teacher education program, the choice of mechanisms is abundant. Brookfield (1995) outlined activities that can be employed for reflection, including journal writing, learning autobiographies, weekly teaching logs, videotaping, and peer observations with feedback and critical incident questionnaires. Other commonly used approaches to help teachers develop reflective habits are case studies, action research, structured observations with feedback, and reflective problem solving (Bartell, 2005).

While research has documented a variety of methods used for promoting teachers’ reflective thinking, one recent avenue for research in this area centers on the use of computer-mediated dialogue. Windschitl (1998) suggested that compared to writing for oneself, writing for an audience and receiving responses has significant positive effects. Additionally, it has been purported that written dialogue is better suited to reflection than oral discussion because it takes more time to produce, is under greater control of readers once they receive it, and has a longer existence (Wells, 1999).

There are at least two types of reflective journaling activities that can take place with computer-mediated dialogue. The first occurs in chat rooms and similar environments where writing and responding are an immediate process. This type of computer-mediated dialogue environment is referred to as synchronous. In contrast, asynchronous environments offer participants the opportunity to think longer about their writing and responses and more freedom to post on their own time. A blog is one example of an asynchronous environment. Wade, Fauske, and Thompson (2008) theorized that asynchronous forms of computer-mediated dialogue appear likely to promote critical reflection, but they cautioned that research findings are mixed about whether they actually produce critically reflective thinking among teacher candidates.

Reflective Practice and Blogging

Electronic discussion boards, in one form or another, have been around for a number of years and have been used in a variety of education settings. In the area of teacher education, these mechanisms have promoted reflective learning, supported problem-based learning, and fostered a sense of community (Hawkes & Romiszowski, 2001). Conversely, web-logs (blogs) are a relatively new medium. Their uses in education are still being explored and developed.

Blogging has become firmly established as a web-based micropublishing tool (Williams & Jacobs, 2004). In their early stages, blogs served as mediums for publishing simple, online personal diaries. Blogs now have the capacity to engage people in knowledge-sharing, reflection, and other collaborative activities. Structurally, blogs display postings in reverse chronological order and offer an opportunity for readers to enter personal responses. Additionally, blogs can index all posted topics on the same page.

Advantages of blogs in education are their use as a journaling instrument for personal reflection, their use as a means of encouraging collaboration, and their use as a tool for empowering students to become confident in analyzing their own thinking (Oravec, 2002). As a two-way form of communication between students and teachers, blogs potentially offer a superior alternative to traditional hard-copy student journals that only provide limited possibilities for feedback (Hernandez-Ramos, 2004). Bouldin, Holmes, and Fortenberry (2006) point out that another advantage of the blog reflective journal is that the instructor knows when posts are made because the software inserts a date and time stamp on each entry. Because the instructor's goal is for students to have regular reflection throughout the term, the entry of date-time stamps minimizes the chance that students will write the total number of required posts on the night before they're due. Ferdig and Trammel (2004) wrote that blogs are superior to synchronous discussion forums for promoting interactivity that is conversational and for improving active learning and higher order thinking.

While blogging is a firmly established web-based communications tool with an estimated number of users in excess of one million (Bryant, 2003), a review of the literature revealed that only a small number of studies have been published examining its use in education. In one study, Stiler and Philleo (2003) incorporated blogging into a preservice teacher education course and then compared students' reflective blog journals to handwritten journals from the previous semester's students. Based on subjective analysis, the blogged entries were determined to be more analytic and evaluative than the handwritten journals from the prior semester. According to Stiler and Philleo, the students' blog entries were longer and written in ways that indicated that students were considering the motivations behind their beliefs rather than merely describing them, compared to students' handwritten journals.

Williams and Jacobs (2004) collected quantitative and qualitative data in a study where participating in a blog was an optional part of the curriculum of two MBA courses. Students enrolled in the courses were encouraged to make five "meaningful contributions" to the blog over a 6-week period. The shape and form that the blog would take was not specified to the students. The researchers concluded that the students were in favor of continued use of blogs for greater interaction with their peers, but they needed to have a clearer explanation of expectations as well as better directions regarding how to go about contributing to the blog.

Xie and Sharma (2004) conducted an exploratory study of perceptions of nine graduate students enrolled in an instructional technology course in which the students participated in reflection over the course of a semester via blogs. The qualitative data supported the proposition that blogs are useful in supporting individual reflection. Similar to the data from Williams and Jacobs (2004), the data from Xie and Sharma's study suggested that the students needed more support with how to approach blogging. The results of this study suggested that a structured introduction to blog technology would support early adoption and appropriate use.

Hernandez-Ramos (2004) used blogs as vehicles for student reflection in an instructional technology course in a teacher preparation program. Students were provided a rubric, and the instructor posted discussion questions. The findings of the study suggested that blogs can be both motivating and threatening to students, but the qualitative analysis showed that use of the blog promoted reflective writing.

Bouldin, Holmes, and Fortenberry (2006) incorporated reflective journaling via web-log technology into a communication course for second-year pharmacy students. The students were required to post two web-log entries per week, and the posts were evaluated by the instructor three times during the term. At the end of the course, the students completed a questionnaire on their perceptions of the blog activity. The researchers concluded that the web-log technology was a useful tool for reflective journaling.

More recently, students enrolled in a basic medicine clerkship rotation at an academic teaching institution were asked to contribute to a reflective class blog. The medical educators' aim was to promote reflection in the areas of humanistic care and professionalism. The researchers found that when blogs are theory driven and structured with faculty facilitation, reflection is promoted. Findings of this study also suggest that blogs uncover elements of the hidden curriculum as well as provide opportunities to support student professional development (Chretien, Goldman, & Faselis, 2008).

Killeavy and Moloney (2010) explored the potential of blogs in supporting reflective journaling during a year-long new teacher induction program. The researchers posted key questions to encourage the bloggers to reflect on areas of practice and experiences of being a teacher. While the researchers found that the blog supported the development of a support community of peers, they found little evidence of reflective writing. Most of the postings were descriptions of practice rather than analysis.

Reflective Practice in CTE Teacher Education

Historically, teaching in CTE programs has relied on competency-based approaches. The conventional paradigm encompasses a directive teacher-centered methodology that focuses on task reproduction for work. However, many calls have been made to reorient the traditional CTE model to a learner-centered constructivist approach (Gregson, 1993; Johnson, 1996; Lynch, 1997; Miller, 1996).

Little research exists that documents reflective practice in CTE teacher education programs. Burns and Schaefer (2002a; 2002b) reported on the use of reflective teaching activities with CTE teachers enrolled in an alternative teacher education certification program. In one study, as a culminating problem-solving activity after a year-long practicum, teachers reflected on what they considered to be the "most important" advice they would give an inexperienced teacher replacing them. The activity was repeated over a 3-year period with three different cohort groups. Burns and Schaefer (2000a) categorized the teachers' writings using Brookfield's (1995) categories of instrumental, emotional, and political dimensions and concluded that "knowing what information teachers recognize as essential to their professional survival provides teacher educators with a glimpse of how to update and design programs that address the issues that face their students" (p. 80).

Burns and Schaefer (2002b) also studied the use of weekly reflective journal-writing of CTE teachers enrolled in an alternative certification program. The researchers were in the process of collecting data over a 4-year period when the events of September 11, 2001, occurred. The researchers reported that the subsequent reflections to prescribed journal questions on teaching practice turned into accounts of personal anguish while the CTE teachers attempted to

meet professional demands in unfamiliar territory. Burns and Schaefer concluded that the importance of the reflective journal was heightened by world events that entered the classroom and that were not specifically related to CTE.

More recently, Greiman and Covington (2007) examined agricultural student teachers' journal writing experiences. The researchers found that the student teachers preferred verbal reflection over written reflection. Additionally, the student teachers were mixed in their reactions to the amount of flexibility in choosing their own journaling topic and to enforced journaling deadlines.

Purpose of the Study

The purpose of this study was to examine if CTE teachers perceived that journaling via a web-log improved their ability to reflect upon their practice. Further, we wanted to examine if journaling via the internet would build a sense of community. Finally, we wanted to examine if the teachers perceived that participating in a blog contributed to their success. The following research questions guided our inquiry:

1. To what extent did new CTE teachers enrolled in an alternative teacher certification program perceive that journaling on a blog improved their ability to think about and analyze their beliefs about teaching?
2. To what extent did new CTE teachers enrolled in an alternative teacher certification program perceive that journaling on a blog initiated a sense of community?
3. Is there a relationship between participating in the blog and perceived success in the alternative certification practicum?
4. Is there a relationship between participating in the blog and perceived success in the profession?

Methods and Procedures

An “availability sampling” approach (Keppel, Saufley, & Tokunaga, 1991) was used to permit exploration of the perceptions of a group of CTE teachers who were all completers of a year-long alternative teacher training program conducted at a major university located in the southeastern United States. The program is considered as alternative because it enrolls CTE teachers who are provisionally certified and teaching in a public high school but who have not yet fulfilled the state requirements of formal teacher education in order to obtain a Clear Renewable teaching certificate (Georgia Professional Standards Commission, 2010). The cohort group consisted of 39 provisionally certified teachers; however, four chose not to participate in the blog. The 35 study participants all had at least 12 years of education, 2 years of occupational experience, and industry licensing in their field. All participants in the study were employed as full-time teachers in the fields of health occupations, automotive service technology, broadcast and video production, construction, cosmetology, electronic technology, engineering drawing and design, graphic communication, information technology, manufacturing and engineering sciences, culinary arts, public safety, or welding technology. The participants' teaching experience in a secondary education program ranged from 1 to 3 years. All participants were adult

learners who ranged in age from 26 to 54 years. The sample consisted of 22 men and 13 women. The alternative certification program consists of 15 semester hours of structured coursework on a university campus. An additional 9 semester hours consist of a field practicum in the schools where the teachers are employed.

A core instrument development team consisting of several CTE course instructors, an instructional technology course instructor, and an industrial/organizational psychologist generated items around the study's conceptual framework, relevant literature, and a number of topics related to the research questions. Questionnaire development was an iterative process. Questionnaire topics were distributed among the team for item generation. The original draft of the questionnaire went through several rounds of item review and revision by both the core development team and reviewers who were asked to provide comments and suggestions on various questionnaire drafts. The instrument was developed to measure the topics adequately but not to be so long that the respondents would not complete it. The instrument was pilot-tested by 10 teachers from the previous year's student teaching practicum class.

The final questionnaire contained 24 items that provided coverage of each of the key topics. Space was provided at the end of the questionnaire for additional comments. Questionnaire instructions were written to communicate clearly that the intent of the questionnaire was to measure the perceptions of the participants regarding the blogging experience. The questionnaire measured participants' perceptions using a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency reliability of the instrument, estimated using Cronbach's coefficient alpha, was 0.76.

As part of a two-semester teaching practicum course, teachers were required to participate in a reflective blog that was set up for course participants only. The blog was created using Blogger, a free blog publishing tool from Google (www.blogger.com). The blog technology that was employed was selected for its simplicity of use and compatibility with available internet browsers. Internet access was necessary, but connectivity speed was not critical. While only invited members may publish on the blog, the blog administrator has the ability to open or close the blog to other readers. The class voted unanimously to open the blog to other readers.

An invitation was sent from an instructor to each participant, and each participant then set up his or her own Google password for entry to the blog. After logon, a student could type an entry into a text box and publish the entry through the use of a single submit button. Edits could be made before or after the entry was posted. Each entry was automatically added in reverse chronological order to other entries on the Web page.

The course required the participants to post on the blog weekly and also to comment weekly on at least one other blog post of their choice. For the first 24 weeks, an instructor posted a weekly question. During the next 4 weeks, the participants could write about a topic of their choice. Some participants reported to an instructor that they were challenged to generate topics; therefore, for the final 4 weeks, an instructor posted a question and the participants could choose to answer the provided question or post on a topic of their choice. The weekly blog assignment comprised 10% of the final grade for the course.

Prior to the blog journaling assignment, a 2-hour interactive session was conducted by one of the course instructors in a campus computer lab in order to familiarize the students with the blog technology. Additionally, the instructors provided the participants a description of the reflective teaching model, the objectives of the assignment, and a rubric outlining the requirements for posts and comments (see Appendix). Rules of appropriate and professional behavior were reviewed and also posted on the blog.

Two of the four instructors reviewed blog entries weekly and provided comments as formative feedback. Because of the number of participants, not every participant was provided feedback each week. Evaluation of the blog content included the following components: frequency of postings (1 per week for full credit), frequency of comments to a post of another student (1 per week), and clarity in writing (grammar and spelling). Formal evaluation was conducted at two points during the semester.

Data were collected at the completion of the second semester of the student teaching practicum, which was also the completion point of the alternative certification program. An invitation to complete the questionnaire was sent to each student's campus email address. Students were also provided an online link to the questionnaire on the blog site and a verbal invitation by a course instructor at the final class session. Students were offered points added to the final grade for completing the questionnaire, along with two other voluntary options if they did not wish to complete the instrument. All options were similar in the amount of time and effort required to earn the extra points. Potential participants were assured that their decision to complete the questionnaire was entirely voluntary. Students' names were removed from the questionnaires before their responses were viewed by the researchers. Participants were assured that their responses would remain confidential and would be reported in aggregate form only. Of 39 teachers, 35 took part by completing all sections of the questionnaire.

The data were analyzed statistically using the Statistical Package for the Social Sciences 16.0. Descriptive statistics were tabulated to obtain mean ratings of teachers' perceptions to each of the Likert-style questions. The relationship of blogging to perceived success in the teaching practicum and the relationship of blogging to perceived success in the teaching profession were examined using the Pearson product-moment correlation coefficient.

Results/Findings

Ninety percent of students participated in the reflective teaching blog. Those students who did not participate in the blog cited difficulty with the technology (11%) and a preference to only read what other students were writing (33%).

Research question 1 asked, "To what extent did new CTE teachers enrolled in an alternative teacher certification program perceive that journaling on a blog improved their ability to think about and analyze their beliefs about teaching?" The results (Table 1, Item 24) reveal that 77.1% of the participants perceived that participating in the blog improved their ability to think about and analyze their beliefs. By getting students to write blog posts and comment on other participants' posts and comment, as assessed by the rubric used in this practicum course, the instructors promoted reflective thinking and writing.

Table 1

Student Perceptions Regarding the Use of Blogs for a Reflective Journaling Assignment in an Alternative Teacher Certification Program (N = 35)

Item	Agree	Disagree	Mean	SD
1. Class members' participation in the blog helped create a sense of community and support among those members who regularly published on the blog.	91.5%	2.9%	4.49	0.85
2. The blog increased the level of meaningful intellectual exchange between the other students and me.	88.6%	2.9%	4.37	0.88
3. I liked that I could communicate outside the classroom.	91.4%	5.8%	4.37	0.91
4. Participating in the blog made me feel like a member of a professional learning community.	85.7%	5.8%	4.26	0.95
5. Participating in the blog eased my feelings of isolation as a Career/Technology teacher.	82.9%	5.8%	4.23	0.97
6. Receiving feedback from my classmates helped me to perform better in my teacher certification classes.	82.9%	2.9%	4.20	0.90
7. The blog assisted with my learning in the Student Teaching Practicum course.	85.7%	2.9%	4.20	0.87
8. Having experienced the blog, I would participate in a similar blog if there were no point values for participation.	80.0%	5.7%	4.11	1.05
9. Receiving feedback from my classmates helped improve my teaching performance in the classes I teach.	77.1%	5.8%	4.09	0.98
10. I would like to see blogging used more widely as a reflective teaching methodology.	71.4%	5.8%	3.94	0.97
11. ^a Participating in the blog helped me to be more creative and to "think outside the box."	70.5%	5.8%	3.79	0.88
12. Participating in the blog helped me to develop the skills needed to critically analyze my work.	57.1%	8.6%	3.71	1.02
13. Participating in the blog motivated me to complete the teacher certification program.	54.3%	17.1%	3.66	1.24
14. ^a Participating in the blog improved my teaching abilities.	52.9%	11.4%	3.62	1.04
15. Participating in the blog motivated me to complete the course assignments.	54.3%	17.2%	3.54	1.22
16. Participating in the blog motivated me to stay in the teaching program rather than seek other employment.	51.5%	20.0%	3.46	1.22
17. It was difficult to think of a topic to write about.	11.2%	71.4%	2.11	1.05

(Table continues.)

Item	Agree	Disagree	Mean	SD
18. The time I spent participating in the blog took time away from my other coursework and my professional development classes.	8.6%	74.3%	1.97	1.04
19. ^a If the blogs were not graded, I would not have taken them seriously.	5.9%	82.4%	1.91	0.83
20. It was a hassle to submit posts on the blog.	8.6%	77.1%	1.86	0.97
21. It was a hassle to comment on my classmates' blog posts.	8.6%	85.7%	1.89	0.96
22. It was intrusive to participate in a blog.	0.0%	85.7%	1.66	0.73
23. Overall, participating in the reflective teaching blog contributed to my success in the Student Teaching Practicum class.	77.2%	8.6%	3.97	1.06
24. Overall, writing on the blog increased my ability to think about and analyze my beliefs as a teacher.	77.1%	8.6%	3.86	1.09

Note. In this table, “Agreement” was interpreted as a response of 4 (agree) or 5 (strongly agree), and “Disagreement” was interpreted as a response of 1 (strongly disagree) or 2 (disagree). Rows do not total 100% because the neutral responses (3) are not shown.

^a*N* = 34 for this item.

Respondents had strong convergent opinions regarding research question 2 (To what extent did new CTE teachers enrolled in an alternative teacher certification program perceive that journaling on a blog initiated a sense of community?). Table 1, Item 1 indicates that 91.5% felt that participation in the blog helped create a sense of community and support among those members who regularly published on the blog, while 85.7% (Table 1, Item 4) felt that participating in the blog made them feel like a member of a professional learning community. Further, 88.6% of the participants (Item 2) felt that participating in the blog increased their level of meaningful exchange with other students, and 91.4% (Item 3) liked the fact that they could communicate with others outside their classroom.

Students were asked if they preferred structured questions or unstructured questions in which a student could blog about anything related to the teaching profession. Thirty-five percent of students preferred structured questions, and 65% preferred unstructured questions. When asked how frequently students should be required to post on the blog during the 16-week semester, 86% reported that students should post once each week, and 11% felt that 2-4 times each week should be required. When asked how frequently the students actually posted on the blog during the semester, 57% stated that they posted once each week, and 22% stated that they posted more than once each week. Seventy-two percent (72%) stated that they spent less than an hour in a typical blogging session, while 22% stated that they spent 1-2 hours. When asked how often they read other students' blog posts during the semester, 11% stated they read other students' blogs on a daily basis, 50% said they read other students' blogs more than once each week, 17% stated they read other students' blogs once each week, and 22% stated they read other students' blogs randomly. Ninety-seven percent of students felt that they received solutions to their problems by participating in the blog, compared to 3% who said they did not.

Research questions 3 and 4 examined perceived relationships between participating in the blog and success in the certification practicum or the teaching profession. Data in this study were treated as interval data, and a Pearson product-moment correlation matrix was obtained to examine how the variables related to each other in terms of strength and direction. Guidelines were met for the use of the parametric procedure by assessing normality in distribution of data for the each variable and the linearity between the variables. The statistical null hypotheses tests were evaluated at the .05 level of significance. We then computed an item-scale correlation. The items formed two scales: Sense of Community and Support (Table 2), and Success in the Profession (Table 3).

Table 2
Intercorrelations for Sense of Community and Support Scale

Item	1	2	3	4	5	6
1. The blog increased the level of meaningful intellectual exchange between the other students and me.	-					
2. Class members' participation in the blog helped create a sense of community and support among those members who regularly published on the blog.	.84	-				
3. Participating in the blog made me feel like a member of a professional learning community.	.69	.85	-			
4. Participating in the blog eased my feelings of isolation as a CTE teacher.	.76	.74	.70	-		
5. Participating in the blog motivated me to stay in the teaching profession rather than seek other employment.	.54	.60	.60	.74	-	
6. Participating in the blog helped me to be more creative and to "think outside the box."	.60	.62	.60	.72	.68	-

Note. $p = .05$ Standard Cronbach's $\alpha = .93$

Table 3
Intercorrelations for Success in the Profession Scale

Item	1	2	3	4	5	6
1. Receiving feedback from my classmates helped me to perform better in my teacher certification classes.	-					
2. Receiving feedback from my classmates helped improve my teaching performance in the classes I teach.	.84	-				
3. Participating in the blog improved my teaching abilities.	.65	.73	-			
4. The blog assisted with my learning in the Student Teaching Practicum course.	.76	.73	.78	-		
5. Participating in the blog motivated me to complete the teacher certification program	.75	.70	.69	.67	-	
6. Participating in the blog motivated me to complete the course assignments	.65	.67	.78	.70	.75	-

Note. $p = .05$. Standard Cronbach's $\alpha = .93$.

Discussion

The use of blogs in CTE alternative teacher education certification programs may fulfill several goals. At one level, pedagogical in nature, this study suggests that participants perceive blogs as a productive tool for reflecting on their experiences in teaching secondary CTE courses. In the “additional comments” section of the questionnaire, one participant commented, “Reading the blog items allows me to think more deeply about my own teaching as I read a wide range of opinions.” Another participant commented, “There is a lot of wisdom out there (on the blog) and a lot to think about.”

On another level, social in nature, this study revealed that blogs can help CTE teachers in developing a sense of community. Teachers typically operate alone in their classrooms or laboratories. The majority of their days are spent interacting largely with students while isolated from other teachers. One teacher wrote in the comment section on the questionnaire, “The blog allowed me to get rid of the feeling that I was alone in dealing with some of the situations in the classroom that I experienced. It felt good to know that others understood my circumstances.” Another commented, “I logged in daily to see what was going on. Often I found encouragement while reading the blogs and it would brighten a gloomy day.” Another blogger commented, “I loved the ability to communicate with others. As a fairly new teacher, I was still able to be supportive. Others had strategies that they could share with me to improve my program as well.”

At yet another level, more practical in nature, students felt that participating in the blog was correlated with success in the practicum course. One student commented, “When I didn’t understand an assignment related to the practicum, or to teaching in general, I could put out an ‘all call’ and the cavalry would appear.”

We postulate that the sense of community that developed from participating in the blog contributed to students’ success in the student teaching practicum, while success in the profession did not because a sense of community was felt *in* the certification class, while success in the profession took place *outside* of the class (e.g., by receiving positive reviews from supervisors at their schools and by seeing their students’ achievements on tests and in project scores).

Conclusions

As a recent technology, the parameters and results of web-log usage within CTE teacher education are still largely unexplored. Understanding teachers’ experiences of their blogging activities has significant meaning for designers of CTE teacher education programs, especially if blogs are to be used to support reflective thinking or collaborative practices. While this study did not examine the posts to determine the different hierarchical levels of reflection (Valli, 1997), future articles will analyze the data collected at this ongoing blog site by employing qualitative methods.

Students’ perceptions are paramount in informing both researchers and teacher educators in further educational and exploratory implementations. We have presented some initial findings. The analysis of the data collected in this study shows students to be in favor of the continued use of blogs as an effective aid to teaching and learning. Further, it appears that a blogging tool

would be a valuable addition to any CTE teacher education program in courses where the students are away from campus and unable to have face-to-face interaction. Blogs can provide students with a high level of autonomy while simultaneously providing opportunity for greater interaction with peers.

Building on these early results, it would be useful to identify additional aids to help CTE teachers develop and further structure their learning and reflective activities. The emergence of online functionalities, such as blogs, enables teacher educators to move towards learner-centeredness and away from teacher-centeredness, supporting the constructivist approach. This phenomenon is in line with CTE program reform. Perhaps by exposing new CTE teachers to blogs, teacher educators may be able to change the bias of new CTE teachers who often employ teacher-centered approaches. The role of values and beliefs in influencing teachers' practices may be affected by activities such as blogging and, in turn, the teachers may adopt a learner-centered approach.

References

- Bartell, C. A. (2005). *Cultivating high-quality teaching through induction and mentoring*. Thousand Oaks, CA: Corwin Press.
- Bouldin, A. S., Holmes, E. R., & Fortenberry, M. L. (2006). "Blogging" about course concepts: Using technology for reflective journaling in a communication class. *American Journal of Pharmaceutical Education*, 70(4), 1-8. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1636988/>
- Brookfield, S. D. (1995). *Becoming a critically reflective teacher*. San Francisco: Jossey-Bass.
- Brookfield, S. D., & Preskill, S. (2005). *Discussion as a way of teaching: Tools and techniques for democratic classrooms* (2nd ed.). San Francisco: Jossey-Bass.
- Burns, J. Z., & Schaefer, K. (2002a). From technician to reflective practitioner. *Journal of Industrial Teacher Education*, 40(1), 74-81. Retrieved from <http://scholar.lib.vt.edu/ejournals/JITE/v40n1/burns.html>
- Burns, J. Z., & Schaefer, K. (2002b). Reflective journal writing of vocational education teachers during the week of September 11, 2001: Confronting personal and professional demands. *Journal of Industrial Teacher Education*, 39(2), 74-85. Retrieved from <http://scholar.lib.vt.edu/ejournals/JITE/v39n2/burns.html>
- Calderhead, J. (1992). The role of reflection in learning to teach. In L. Valli (Ed.), *Reflective teacher education: Cases and critiques* (pp. 139-146). Albany: SUNY Press.
- Chretien, K., Goldman, E., & Faselis, C. (2008). The reflective writing class blog: Using technology to promote reflection and professional development. *Journal of General Internal Medicine*, 23(12), 2066-2070. doi: 10.1007/s11606-008-0796-5
- Dewey, J. (1991). *How we think*. Amherst, NY: Prometheus Books. (Original work published 1910)

- Ferdig, R. E., & Trammell, K. D. (2004, February). Content delivery in the 'Blogsphere.' *T.H.E. Journal*, 31(7), 12-16. Retrieved from <http://www.thejournal.com/articles/16626>
- Georgia Professional Standards Commission. (2005). 505-3-.07 Alternative Routes. *Educator Preparation Rules*. Retrieved from <http://www.gapsc.com/Rules/Current/EducatorPreparation/index.asp>
- Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Web 2.0 classroom research: What path should we take now? *Educational Researcher*, 38(4), 246-259. doi: 10.3102/0013189X09336671
- Gregson, J. A. (1993). Critical pedagogy for vocational education: The role of teacher education. *Journal of Industrial Teacher Education*, 30(4), 7-28.
- Greiman, B. C., & Covington, H. K. (2007). Reflective thinking and journal writing: Examining student teachers' perceptions of preferred reflective modality, journal writing outcomes, and journal structure. *Career and Technical Education Research*, 32(2), 115-139.
- Griffin, M. L. (2003). Using critical incidents to promote and assess reflective thinking in pre-service teachers. *Reflective Practice*, 4(2), 207-220. doi: 10.1080/1462394032000082259
- Grossman, P., Wineburg, S., & Woolworth, S. (2001). Toward a theory of teacher community. *Teachers College Record*, 103, 942-1012.
- Hawkes, M., & Romiszowski, A. (2001). Examining the reflective outcomes of asynchronous computer-mediated communication on inservice teacher development. *Journal of Technology and Teacher Education*, 9(2), 285-308.
- Hernandez-Ramos, P. (2004). Web logs and online discussions as tools to promote reflective practice. *The Journal of Interactive Online Learning*, 3(1), 1-16. Retrieved from <http://www.ncolr.org/jiol/issues/PDF/3.1.4.pdf>
- Johnson, S. D. (1996). An alternative vision for assessment in vocational teacher education. In N. K. Hartley & T. L. Wentling (Eds.), *Beyond tradition* (pp. 147-166). Columbia, MO: University Council for Vocational Education.
- Kay, J. K., & Todnem, K. L. (2002). Capturing complexity: A typology of reflective practice for teacher education. *Teaching and Teacher Education*, 18, 73-85.
- Kaplan, D. S., Rupley, W. H., Sparks, J., & Holcomb, A. (2007). Comparing traditional journal writing shared over e-mail listservs as tools for facilitating reflective thinking: A study of preservice teachers. *Journal of Literacy Research*, 39(3), 357-387. doi: 10.1080/10862960701613136
- Keppel, G., Saufley, W. H., Jr., & Tokunaga, H. (1991). *Introduction to design and analysis* (2nd ed.). New York: W. H. Freeman and Company.

- Killeavy, M., & Moloney, A. (2010). Reflection in a social space: Can blogging support reflective practice for beginning teachers? *Teaching and Teacher Education*, 26, 1070-1076. doi: 10.1016/j.tate.2009.11.002
- Kay, J. K., & Todnem, K. L. (2002). Capturing complexity: A typology of reflective practice for teacher education. *Teaching and Teacher Education*, 18, 73-85.
- LaBoskey, V. K. (1994). *Development of reflective practice: A study of preservice teachers*. New York: Teachers College Press.
- Loughran, J. J. (2002). Effective reflective practice: In search of meaning in learning about teaching. *Journal of Teacher Education*, 53(1), 33-43.
- Lynch, R. L. (1997). *Designing vocational and technical teacher education for the 21st century: Implications from the reform literature*. Columbus, OH: Center on Education and Training for Employment. (ERIC Clearinghouse on Adult, Career, and Vocational Education, Information Series No. 368)
- Miller, M. D. (1996). Philosophy: The conceptual framework for designing a system of teacher education. In N. K. Hartley & T. L. Wentling (Eds.), *Beyond tradition* (pp. 53-72). Columbia, MO: University Council for Vocational Education.
- Schon, D. A. (1983). *The reflective practitioner*. New York: Basic Books.
- Schon, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Sparks-Langer, G. M., Simmons, G. M., Pasch, J. M., Colton, A., & Starko, A. (1990). Reflective pedagogical thinking: How can we promote it and measure it? *Journal of Teacher Education*, 41, 23-32.
- Stiler, G. M., & Philleo, T. (2003). Blogging and blogspots: An alternative format for encouraging reflective practice among pre-service teachers. *Education*, 123(4), 789-797.
- Valli, L. (Ed.). (1992). *Reflective teacher education: Cases and critiques*. Albany: SUNY Press.
- Valli, L. (1997). Listening to other voices: A description of teacher reflection in the United States. *Peabody Journal of Education*, 72(1), 67-88.
- Wade, S. E., Fauske, J. R., & Thompson, A. (2008). Prospective teachers' problem solving in online peer-led dialogues. *American Educational Research Journal*, 45(2), 398-442. doi: 10.3102/0002831207308224
- Wells, G. (1999). *Dialogic inquiry: Toward a sociocultural practice and theory of education*. Cambridge, UK: Cambridge University Press.
- Windschitl, M. (1998). The WWW and classroom research: What path should we take? *Educational Researcher*, 27(1), 28-33.

Williams, J. B., & Jacobs, J. (2004). Exploring the use of blogs as learning spaces in the higher education sector. *Australasian Journal of Educational Technology*, 20(2), 232-247. Retrieved from <http://www.ascilite.org.au/ajet/ajet20/williams.html>

Xie, Y., & Sharma, P. (2004, October). *Students' lived experience of using weblogs in a class: An exploratory study*. Paper presented at the meeting of the Association for Educational Communications and Technology, Chicago. (ERIC Document Reproduction Service No. ED485009)

Authors

Janet Z. Burns is an Associate Professor in the Department of Middle-Secondary Education and Instructional Technology at Georgia State University, P.O. Box 3978, Atlanta, GA, 30302-3978. Email: Jburns@gsu.edu. Phone: 404-413-8417. Fax: 404-413-8063. **Donna Wolosin** is an Adjunct Professor in Industrial/Organizational Psychology at National University, San Diego, CA. Email: dgwoloin@san.rr.com. Phone: 858-509-2674.

Appendix

Reflective Teaching Log/Blog

What is a Reflective Teaching Log/Blog?

A teaching log is a weekly record of the events in a teacher's life that have impressed themselves most vividly on his or her consciousness. Events that excite or enrage us are those that tell us most about ourselves. A reflective log can help us become aware of the strengths and blind spots in our work.

This semester you will submit weekly reflective blog entries. A blog is a "Web log" that allows users to write (post) chronological journal entries to the Internet. Contributors to the blog can also comment upon their classmates' posts. Thus, reflective blogging encourages community writing. Every week you will post one reflective blog entry and comment on one of your classmate's reflective blog entries on the New Career and Technical Education Teachers' Reflective Blog. The website is: <http://newcteteachers.blogspot.com/>. (Note: This is an invitation-only blog. You will receive an invitation via your email to join this blog. Simply follow the instructions to join.)

Suggested Writing Topics

Some weeks a reflective question will be posted for you, and other weeks you will be free to write about issues of your choice related to teaching. We suggest that you use the Reflective Blog for the following:

- To discuss challenges you may be facing in your classroom in order to seek advice from your teacher peers or your supervising instructor. These challenges might concern teaching practices, evaluation and assessment, classroom management, integrating technology, and lab management issues.

- To describe a wonderful teaching/professional experience or a stressful teaching/professional experience.
- To share something you learned at a professional development workshop.
- To brainstorm ideas, solutions to problems, etc.
- To discuss course assignments.
- To describe what happened in your own classroom when you implemented a new instructional strategy or assessment method that you learned in one of your certification courses.
- To share best practices with your peers. This could include successful lessons, engaging instructional activities, games, and anything else that you've used effectively in your own classes.
- To comment on your classmates' posts.
- To heighten your awareness of grammar and word choices in your new profession.

How will my weekly blog posts/comments be evaluated?

Blog Posts (A post is a reflective entry that you publish on the blog.)	Blog Comments (A comment is a written response to someone else's post on the blog.)
Submit one post per week, each on a different topic.	Comment on at least one class member's blog post per week.
Posts should be at least one paragraph in length (8 to 12 sentences).	One comment should be at least one paragraph in length (8 to 12 sentences). Other comments can be shorter.
Posts should be free of grammatical and spelling errors – appropriate for the teaching profession.	Comments should be free of grammatical and spelling errors – appropriate for the teaching profession.
Read the rules for posting to the blog before you begin posting. These rules are posted on the blog site.	Read the rules for posting to the blog before you begin posting. These rules are posted on the blog site.

Reflective Teaching Blog Rubric/Component Point Values - Directions:

1. Between now and the end of the semester, once per week, post a reflective blog entry on the New CTE Teachers' Blog. Each entry should be on a different topic. You must post at least one entry per week. Your entries will be monitored and evaluated on a weekly basis.
2. Between now and the end of the semester, comment upon at least one class member's blog post each week. You must write at least one comment per week. Your comments will be monitored and evaluated on a weekly basis.

Grading Rubric

Criteria	Points Available ^a	Points Earned/Comments
Publish: <ul style="list-style-type: none"> • 1 post each week • Published posts related to suggested blog topics or to teaching/learning • 1 paragraph minimum (8 to 12 sentences) • Grammar, spelling, etiquette appropriate for a teacher 	60 (5 pts per post)	
Publish: <ul style="list-style-type: none"> • 1 comment each week • Published comments related to suggested blog topics or to teaching/learning • 1 paragraph minimum (8 to 12 sentences) • Grammar, spelling, etiquette appropriate for a teacher 	60 (5 pts per post)	
Total	120	

^aPoint values are provided to readers of this article as an example only.