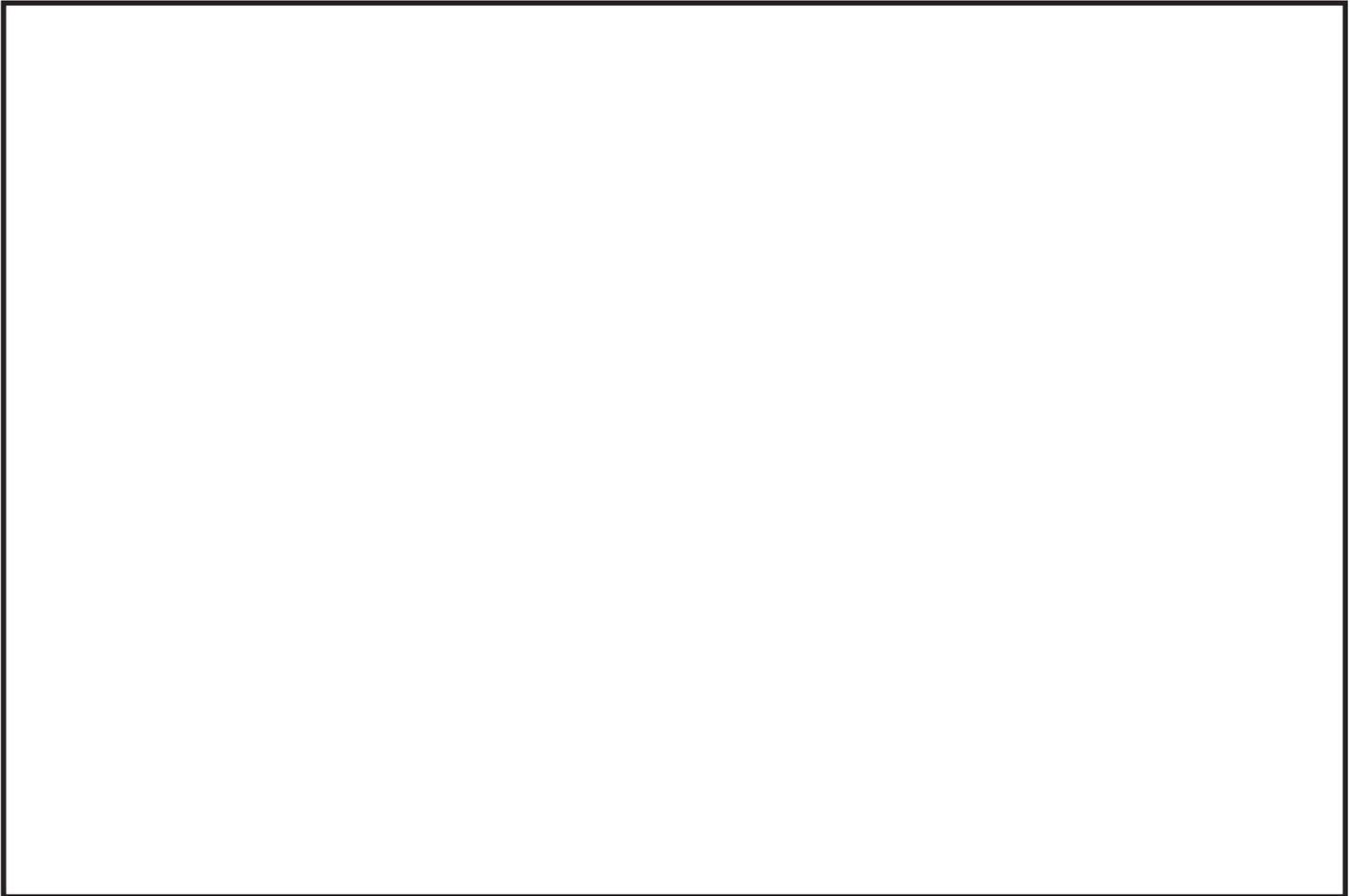

Volume 11, No. 2 Spring 1998

MID-WESTERN EDUCATIONAL RESEARCHER

• Official Publication of the Mid-Western Educational Research Association •



The University of Toledo

On the Cover

The history of the College of Education and Allied Professions dates back to 1872 when education courses were offered for local teachers. On March 14, 1916, the faculty of the College of Arts and Sciences recommended to the University Board of Directors that the Education Department be reorganized as Teachers College. A few years later the name was changed to the College of Education.

From 1920-1950, the infant college developed the continuity and stability sufficient to identify a mission and to build a constituency necessary for the sustained progress and expansion of the college. Quickly, the college assumed a major leadership role in the improvement of education in Northwest Ohio and Southwest Michigan. A large percentage of alumni became local teachers, superintendents, principals, district supervisors, and specialists in schools; other became college professors.

The 50s to 70s was an era of program growth and enhancement. Some of the major accomplishments of the faculty during this period were to undertake the first doctoral program at The University of Toledo, gain full accreditation by the National Council for the Accreditation of Colleges for Teacher Education, and initiate the honorary societies Kappa Delta Pi and Pi Lambda Theta. By this time, the college offered teacher education programs in most all teaching fields then recognized by the State of Ohio.

In 1979, to recognize the breadth and importance of all programs offered through the College of Education, it was renamed the College of Education and Allied Professions. Subsequently, the college further broadened its scope and opened new degree and program options outside teacher training whose core learnings are found in education professions.

In the last several decades the college has flourished. It has reconstructed its teacher preparation programs and revised most other programs as well as adding a variety of additional program options. The curricula has been approved and commended by the Ohio State Department of Education and has been accredited and commended under the revised standards of the National Council for the Accreditation of Teacher Education.

(continued on inside back cover)

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8 1/2 x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article.

The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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1680 University Drive, Ohio State University at Mansfield, Mansfield, OH 44906

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Teacher's Lives and Beliefs: Influences That Shape the Teaching of U. S. History

Michael H. Romanowski
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Abstract

The purpose of this study was to examine the complex influences that shape the teaching of U. S. history. Six secondary American history teachers participated in interviews and classroom observations centering on factors that affect their approach to the teaching of U. S. history. Findings indicate that there are various influences that play a significant role in determining the version of U. S. history students have the opportunity to learn. These include teachers' personal beliefs about religion and morality, the affect of history professors, and teachers' social class and family backgrounds. Several suggestions are made as to how teacher education programs can encourage pre-service teachers to examine the influences that shape their lives, classrooms, and students.

During a recent class observation, I was struck by a particular statement made by the student teacher. At the beginning of a lesson while passing out a handout on political party platforms, the student teacher attempted to place herself in a neutral space by stating that she neither favored nor opposed any of the parties' positions. She informed the class that her views were unimportant and her goal was simply to discuss how the individual political parties platforms differed.

The lesson began and the student teacher quickly omitted the areas regarding the current state of the economy and taxes and chose the abortion issue to start class discussion. Leading questions soon revealed this teacher's acceptance of abortion in cases of rape and incest. Gun control was next on the agenda, and as the discussion progressed, one student who opposed any type of weapons restrictions was asked by the student teacher "how often do you need assault weapons to kill deer?" When affirmative action surfaced, the class was introduced to a California case where a qualified white male was refused admission to medical school because of the use of quotas. A personal experience was introduced to further illustrate her point. Finally, additional issues such as funding for the arts and homosexual rights were dismissed as unimportant and the class moved to a videotape dealing with the presidential election.

Not bad for a brief lesson. Powerful messages were communicated to students through interaction with their student teacher. Students learned that abortion was acceptable in certain circumstances; government control of weapons was a good thing; affirmative action was not working; and other political issues such as taxes, state of the economy, funding for the arts and homosexual rights were not important enough to merit class discussion. More importantly, students learned that the

teacher's views are of the highest value since these views dominated the direction of class discussion. Although the student teacher claimed to be neutral and none of the above messages were listed in her lesson plan, these and other messages did nonetheless flow predictably and consistently from her teaching and questioning strategies.

Clearly, this scenario confirms that the individual teacher's "personal theories and beliefs serve as the basis for classroom practice and curriculum decision making" (Ross, Cornett, & McCutcheon, 1992, p. 3). The manner in which teachers experience and understand the world plays a significant role in defining, selecting, and organizing information in their classroom. This, in turn, constructs the version of U. S. history that students have the opportunity to learn. In the following discussion, I address the complicated process of teaching U. S. history in secondary classrooms and the role that teacher's lives and beliefs play in shaping the U. S. history curriculum.

The Role of Beliefs and Life Experiences in Teaching

Few would argue that teaching is not a complicated task that is saturated with both explicit and implicit personal values and beliefs. Since teaching requires evaluation, interpretation, and choice, the process is never value-free or neutral. Located beneath the classroom practice of every teacher is an elaborate set of beliefs that are interwoven into the fabric of one's personal and professional life. This belief system serves as an organizing framework that establishes patterns of meaning, determines right and wrong, aids in historical interpretation, informs evaluations, and more or less forms a coherent picture or argument. These beliefs and values guide teachers' decisions regarding curriculum and instruction.

This complex belief system includes individual life philosophies, habits, personal experiences, and social histories, all of which permeate teachers' understanding of their work,

Special appreciation is extended to those teachers who shared their classrooms and life experiences. The author wishes to thank Kari Sowers for her diligent efforts transcribing tapes, for her helpful comments on earlier drafts of this manuscript, and her excellent proofing skills.

their students, the subject matter, and their roles and responsibilities as classroom teachers. In order to better understand the role beliefs play in teaching, these systems “may be conceived as minitheories of the mind, ways of characterizing language and behavior. . . they are part of the social and cultural truths to which individuals try to adhere in daily living” (Horowitz, 1994, p. 3). They can be better understood as “mental constructions of experience” (Sigel, 1985, p. 351) which are organized into concepts that are considered to be true and used to guide behavior (Pajares, 1992). Furthermore, belief systems serve as an individual’s view of reality that holds enough truth to guide his or her thoughts and behavior (Harvey, 1986).

Belief systems are essential because not only do they shape the way teachers define and understand physical and social realities, but beliefs foster schools of thought and are unavoidably intertwined with knowledge. Teachers’ beliefs have been the center of much research, and the concept has been labeled with a variety of terms. For example, Clark (1988) labels teachers’ beliefs “preconceptions and implicit theories” while Goodman (1988) terms them the “teachers’ perspectives.” In addition, the concept of “frame” is often used to describe the underlying assumptions that influence the teachers’ actions in the classroom and their interaction with subject matter (Schon, 1983; Wyer and Srull, 1984;

Barnes, 1992). This refers “to the clustered set of standard expectations through which all adults organize, not only their knowledge of the world but their behavior in it. We might call them the default settings of our daily lives” (Barnes, 1992, p. 16).

It is vital to understand that U. S. history teachers are not merely “passive transmitters of knowledge” (Elbaz, 1981, p. 43). Rather, each teacher brings his or her own individual experiences, beliefs, attitudes, and ways of looking at the world to the classroom. All teachers become “curriculum choice makers” who apply their beliefs and perspectives in making decisions about the particular content that they will teach (Ben-Peretz, 1990). These pedagogical decisions require that teachers engage in “a dialogue between the textbook, their own version of the subject matter, and the class” (Gudmundsdottir, 1990, p. 48). This belief guided works to select, organize, and frame materials to form a coherent picture or argument of a particular content area (Wade, Thompson & Watkins, 1994). The end result is the manipulation of knowledge and curriculum to fit the individual teacher’s orientation toward the subject matter (see Figure 1).

As shown in Figure 1, there are multiple influences that play critical roles in the dialogue that teachers engage in regarding students, instruction, and subject matter. This dialogue is a complex process that continually constructs and

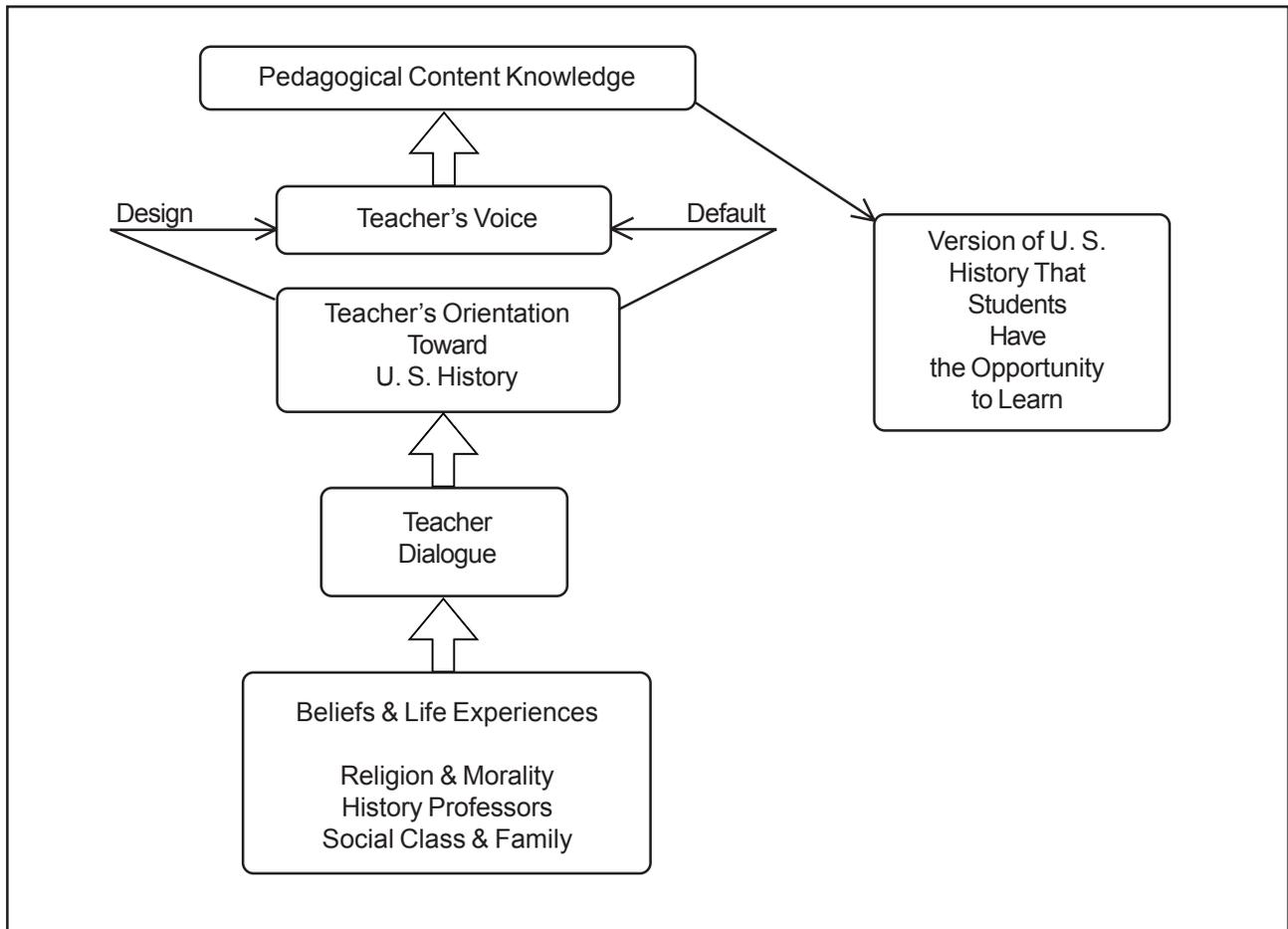


Figure 1. Teachers’ understandings of the influences shaping the U. S. history curriculum

reshapes a teacher's orientation toward his or her subject matter. This orientation is then articulated to students through the teacher's voice. The concept of orientation can be referred to as "the specific ways in which an individual looks at the world" (Van Manen, 1977, p. 211). Often described as a world view, a "point of view, perspective, a person's way of looking at things, outlook, standpoint and so on" (Van Manen, 1977, p. 211), a person's orientation is composed of what he or she believes to be true, to be valuable, and to be real. As shown in Figure 1, an individual's orientation always surfaces in the classroom as the teacher's voice or personal curriculum.

Dialogue occurs differently for every teacher. Some teachers consciously design an orientation while others develop an orientation by default. For example, experienced teachers are possibly more aware of these influences, more attentive to the role that their voices play in the classroom and therefore play an active role in constructing their orientation. On the other hand, a novice teacher's orientation might be shaped by default with little consciousness on the part of the individual. Hence, this teacher may believe that he or she is objective and see little effect of his or her beliefs on the U. S. history curriculum.

The concept of voice has been central to the research on teacher knowledge, and it should be noted that other researchers have employed terms similar in meaning, such as personal or teacher's perspective, personal theory, implicit theory, personal practical knowledge, personal curriculum, and teacher's lives (Butt, Raymond, & Yamagishi, 1988; Clark & Peterson, 1985; Connelly & Clandinin, 1987; Gilligan, 1982; Goodson, 1991; McDonald, 1988). This type of research centers on the idea that teachers bring their lives to the classroom and that these lives are made up of a cluster of complex experiences, beliefs, and worldviews. More importantly, the teacher's life and belief system are instrumental in defining, selecting, and organizing information in which students have the opportunity to learn.

The end result of this process is pedagogical content knowledge (Gudmundsdottir, 1990). As shown in Figure 1, a teacher's orientation played out in the classroom surfaces as the teacher's voice or personal curriculum. This, in turn, becomes pedagogical content knowledge which contains two components, content and pedagogy (Grossman, 1989; Shulman, 1987). Pedagogical content knowledge is subject matter that has been reorganized with consideration of students, pedagogical strategies, and curriculum. This reorganization revolves around a teacher's orientation and includes not only selecting and omitting knowledge but also adopting teaching methods that are in line with the knowledge they believe students should learn.

From my own experiences talking with secondary social studies teachers about the teaching of U. S. history, they regularly introduce information about their own lives and beliefs into the discussion. Their descriptions illustrate how important experiences and beliefs are to the teaching process and how these play a fundamental role in constructing

their orientation toward U. S. history and their interpretation of the texts they teach. Through this interaction with teachers, it becomes evident that the experiences and beliefs of teachers play a fundamental role in constructing their orientation toward U. S. history and their interpretation of the texts they teach. Therefore, in order to understand the influences that shape teachers' approaches to the teaching of U. S. history, we need to know more about teachers' lives. Thus, this study was designed to identify and determine how teachers' personal beliefs and life experiences play a role in shaping the manner in which they teach American history.

Information Collection and Analysis

The findings discussed in this study are based upon information gained from a previous research study that examines the multiple and complex issues and influences that shape the teaching of U. S. history (Romanowski, 1996) and a current study which uses both interviews and classroom observations. This research advances previous work by presenting findings from interviews and classroom observations of six secondary U. S. history teachers. The data consists of transcribed interviews, transcribed classroom observations, and observer's notes. The participants are six teachers, five men and one woman, with an average of sixteen years of experience teaching U. S. history in six different high schools. These six schools districts are characterized as rural¹ with student populations for grades 9-12 consisting of 254, 288, 301, 375, 886, and 1134.

Prior to the initial interview, teachers were asked to reflect upon, record notes, and provide examples of the possible factors that influenced their content selection and teaching of U. S. history. Individual teachers then participated in a 50-75 minute interview. Each interview focused on the teachers' conception of subject matter, the current courses they were teaching, students in the class, and their individual approaches to transforming content knowledge.

Every interview began with a teacher-initiated conversation based on previous reflection and thoughts regarding teaching. This increased the chance that information came from the respondent rather than solely being determined by the researcher's questions. Participants were also asked to supply examples from their teaching to solidify their points. Based on the information individual teachers presented, the researcher used probing questions that extended the information and allowed additional questions to emerge from the context. This permitted a more thorough understanding of the respondent's opinions and the reasoning behind them. All interviews were tape recorded and transcribed.

¹ The high schools represented in this study are categorized by the criteria used for field experience and student teaching placement. Rural schools are categorized by a student population of less than 10 percent minority while city schools contain more than 10 percent minority population.

In order to validate the interviews, each participant was observed teaching U. S. history during several class periods. In several cases, classrooms were videotaped but when this was impossible, ethnographic field notes were taken. At the completion of each observation, all participants were interviewed for approximately 15-25 minutes. Each teacher was then asked to reflect on the lesson citing examples of factors and/or beliefs that might have shaped the particular content or approach to the topic. A brief dialogue occurred between teacher and researcher centering on information from the interviews and the observed lesson.

Each analysis began by listening to the taped conversation and then carefully reading the interview transcripts and field notes. Based on this reading, initial analysis consisted of coding the conversations using categories from the theoretical framework developed in the previous study². These four theoretical categories were particularly relevant for the information and served as a starting point for the analysis. After close analysis of the language that teachers use, their own reflection about teaching, and classroom observations, various implicit beliefs and influences that shaping their teaching emerged and were grouped into the categories of religion and morality, history professors, and social class and family (see Figure #1). These elements make up teachers' orientation toward their subject matter. Eventually the orientation surfaces as a personal curriculum that creates value-laden impressions for students to learn.

Findings and Discussion

The Impact of Beliefs and Life Experiences

Religion and morality. According to the teachers in this study, it is clear that the beliefs they hold and their life experiences play a significant role in shaping their teaching of U. S. history. Since the teaching process is an extremely value-laden endeavor, teachers can never claim to be morally neutral or value free. Whether one realizes this or not, all teachers "cannot avoid imparting values in one way or another in the normal course of their activities. . . What we consider 'good,' 'right,' or 'important' constantly guides our practice, whether consciously or not" (Carbone, 1987, p. 10).

In this study, teachers indicated that religion and issues of morality seem to be determining factors on how they approach various historical events. The following dialogue demonstrates one teacher's awareness of his religious convictions that surface in the classroom.

Interviewer: What other factors influences the way you approach U. S. history?

Teacher: Certainly my Christian faith. . . that influences my outlook. I think it is important to get students to see the role that religion has played in people's lives. For example in Lincoln's second inaugural address, he is famous for having said malice toward none and charity for all. . . Few historians concentrate on the middle portion where he talks about why the Civil War happened. . . he [Lincoln] says that war was proof of a just God because both sides prayed to the same God and neither prayers were answered. . . Lincoln espouses the view that God plays a role in history. . . You don't have to acknowledge a belief in a God but obviously Lincoln believed in a God or he wouldn't have spoke in those terms. I think my students should be aware of those things and that is not preaching a view of religion, its just showing that the founders were religious. . . I don't think I teach this but God's hand is in every great historical. This probably affects many parts of my teaching. I might not be conscious of all this.

It is evident that this teacher's "Christian upbringing" plays a important role in his orientation toward U. S. history. Not only does he acknowledge the role religion plays in his pedagogical decisions about Lincoln and the civil war, but he is also aware that his belief that "God's hand is in every great historical event" might possibly shade his teaching of other historical events.

Although personal religious beliefs were not discussed by each participant, all teachers in this study expressed a concern for raising ethical issues, discussing what is right or wrong, or addressing morality within the history curriculum. The following comments by various teachers describe how issues of right and wrong shape their approach to U. S. history.

Teacher: Religious background makes a difference. What you think is morally right or morally wrong. The moral judgments you are passing on societies plays a role on how you teach.

Teacher: I guess learning from my dad the attitude of taking care of the poor. . . I think maybe this unselfish attitude. I want the kids to be aware of this. Yeah I bring this in. You owe it to get through the curriculum, you owe it to teach the course but you also owe to this dialogue [on moral issue].

It is evident from these teachers' comments not only that issues of right and wrong influence their teaching of U. S. history but also the concern for morality became evident in several classroom observations. For example, one lesson on the dropping of the atomic bomb centered on issues of right and wrong behavior; a lesson on life in the 1950's raised questions regarding the moral aspects of income distribution; and a lesson on the cold war also encouraged students to reflect upon the morality of decisions made at that time.

Exactly how teachers' religious and moral convictions affect their approach to teaching is still not very well under-

² This study used the following categories: 1) Community Expectations and Beliefs; 2) Student Beliefs and Issues of Resistance; 3) U. S. History Textbooks; and 4) Teacher's Voice/Personal Curriculum. For a further description see Romanowski, M. H. (1996). *Issues and Influences That Shape the Teaching of U. S. History*. In J. Brophy (Ed.), *Advances in Research on Teaching, Vol. 6. History Teaching and Learning* (pp. 291-312). Greenwich, CT: JAI Press.

stood, but we can be sure that all teachers impart morals and values upon their students. These examples demonstrate that the moral dimensions of teaching are inescapable and play a major role in determining what is considered legitimate or accepted views and understandings of U. S. history. The teacher's decisions as to what is morally appropriate shapes the teaching process by determining the perspectives and knowledge students have access to.

History professors. All participants described their own schooling experiences as factors that influenced their teaching, especially the role of professors of history. While in college, when pre-service history teachers study the subject matter that they will eventually teach high school students, they are not simply learning a body of facts. As they engage textbooks and class lectures, they are acquiring a particular understanding of the world.

Gudmundsdottir (1990) argues that after teachers have forgotten the facts of U. S. history learned in college, they still retain value-laden impressions. In turn, the impressions play an active role in shaping their pedagogical content knowledge and their interpretation of secondary U. S. history textbooks. These "value-laden impressions become their personal curriculum, the most hidden and least studied of all school curricula, yet it is the slice of secondary education that is most likely to remain with the student" (p. 47). The following comments made by teachers demonstrate how these impressions not only remain with these teachers but play an active role in their current teaching.

Teacher: In college, I found out that there was another whole history that I didn't know existed. For a long time, I resented that and thought, "Why do they [college professors] dig up all the dirt?" and "Why is there always the negative?" Sure it affects me now. I feel compelled to talk about some of the lesser noble qualities of many of our presidents and maybe other people. You might as well not have them go out of here with a rose colored view that is not true. It just is not true. . . I certainly have a broader view of history. There are still things that I learned in college classes that I bring into my classes today.

Teacher: I guess probably a big change for me was going to college during the sixties and being in the history and political science department. If there was anybody down there that was not a liberal democrat, I didn't meet any of them if they were there. They [professors] had a huge impact on me and I guess I could consider myself more of a liberal ever since. They [professors] certainly had a huge impact on me because it [college] totally changed my way of thinking about things.

It is evident that college professors influence the teaching of secondary U. S. history. Certainly the degree of influence would depend on both the individual professor and teacher. Not only did teachers describe this influence but it became obvious in several classroom observations. For example, one particular teacher described the NATO and

Warsaw Pact by using an example given to him by a college professor. He added that this professor also taught ROTC classes and that this provided him with insight to this topic.

Social class and family. According to Bourdieu (1977, 1984), human thought is a form of socialized knowledge which is conditioned by cultural surroundings. Teachers' epistemologies reflect their cultural history and family social class background. Teachers enter the classroom with an understanding of the world, subject matter, and school that is filtered through beliefs, images, and myths which they have acquired from families, peers, media, and other life experiences.

Based on this process, teachers in this study indicated that the family and social class structure in which they were raised played an intricate role in constructing their identities, thus maintaining a significant role in shaping their teaching and views toward various historical events. The following excerpts demonstrate how parents and social class upbringing play a role in their selection, organization, and actual teaching of historical events.

Teacher: I think that family influences and values influence your political views, social and economic backgrounds. . . When it comes to teaching the industrial revolution and similar events, I know that I am pretty much a pro-labor person. Why? I grew up in a working class family where my father was a tire builder, my grandfather was a tire builder, I worked my way through college a member of United rubber workers. That [pro-labor viewpoint] comes from my family background and that gets brought into my lessons. For example, I would say I am rather opinionated when it comes to students who grew up in families where their dads are in management and don't like unions. They [students] come in here and listen to me and I paint a nice rosy picture of unions and what great things they did for the average American person.

Teacher: I try to rely on strengths from experiences that I have had. I can relate back to my family. . . my family is a blue-collar family and my dad never had much until he went to work in a plant. He was in UAW and as a kid. I can remember the strikes and not having much work and trying to take extra jobs to make ends meet till the strike was over. I can see how my dad has a strong union background because he owes everything he has to that movement and the gains that were provided for him. So it [blue collar family background] does influence how you think and I try to bring some objectivity to it but yet you have that personal experience.

Growing up in working class families with parents active in labor unions, these teachers are certainly aware of how those experiences influence their teaching. Although teachers' examples were limited to the teaching of the labor union movement, each teacher understands how parental influence based on working class values plays out in their classrooms. This was especially evident during class dis-

cussion when they address “white collar” or upper class students. Their professionalism enables them to be aware of the need for “objectivity,” but as one teacher stated “you have that personal experience” and that personal experience shades the presentation of labor unions and management. Not only does this aspect of their identities affect the presentation of labor unions, it also dictated the amount of time spent on labor and management issues. Two teachers indicated that they enjoy and that they spend significant time on these and related issues during the school year, both feeling that maybe they place too much emphasis on this area.

Furthermore, one teacher stated that “I often teach from the disaffected point of view. . . I guess that is my background.” This individual’s social class background surfaced when he had the opportunity to teach from what is termed “bottom up history” where the emphasis is on social history or the history from the perspective of the “average” American. Similar comments were made by another teacher.

Teacher: I came from a working class relatively poor background and I think it is important that we understand history from the ideas of those who lived it, those who were a part of history, not just necessarily from those people writing from their ivory towers in some fourth floor building on some college campus. I often share stories from my parents and grandparents who were hardworking people. . . you never get rid of that family upbringing.

This teacher demonstrates how stories from the “common people” and social history are important in his teaching. More importantly, these stories evolve from his own life experiences growing up working class. At times during our conversations, this individual expressed some degree of anger toward what he termed “privileged upper class” which would clearly surface in his classroom.

Suggestions for Teacher Education

We may not fully understand how an individual teacher’s orientation is constructed, but we do know that beliefs and life experiences play a significant role in determining the version of U. S. history students have the opportunity to learn. My findings suggest that a better understanding of these factors and the role they play in shaping the social studies curriculum would help teachers to understand what they do, why they choose to do it, and the educational effect they have on students. I suggest several ways that teacher education programs can help pre-service teachers to examine the influences that shape the way they see the world and to begin to understand how these influences shape their individual classrooms.

First, teacher education programs must make opportunities for pre-service teachers to reflect about themselves regarding their beliefs and experiences and how these play a role in their understanding of schools, teaching, and curriculum. This type of self analysis is vital since teaching “in-

volves knowing oneself well, one’s attitudes, beliefs, values and prejudices as well as one’s underlying conceptions of knowledge and knowing” (Balaban, 1995, p. 60). In response, teacher education programs must provide formal opportunities for students to reflect upon their own schooling and life experiences and determine their own belief systems and how these have been constructed. Balaban (1995) argues that “facing our biases openly, recognizing our limits imposed by our embeddedness in our own culture and experience, acknowledging the values and beliefs we cherish, and accepting the influence of emotions on our actions are extraordinary challenges” that must be addressed by teachers (p. 49).

Second, it is important for pre-service teachers to understand that there are multiple ways of viewing content knowledge and that these perspectives rely upon one’s understanding of the world. Teacher educators must provide prospective teachers with the skills and knowledge necessary to uncover the values embedded in pedagogical content knowledge. For example, this can be accomplished through Schwab’s (1978) “polyfocal conspectus.” This is a system of critical reflection of subject matter through multiple perspectives that exposes and “lifts out” the values and ideologies embedded in the varying viewpoints. Each perspective is “studied, interpreted, discussed, and debated” (p. 346). The value-laden perspectives are then compared, to give prospective teachers a sense of the many possible interpretations and the strengths and weaknesses of their own perspective. Only when students are exposed to multiple interpretations and the other’s perspective can they begin to develop complex understandings of historical events.

Finally, it is important to understand that although this research is limited to secondary social studies teachers, teachers of all levels must develop a critical eye when engaging their subject matter. There must be a strong emphasis on the foundations of education which enable students to reflect upon why they use should not use certain pedagogical approaches. Therefore, I think that it is important to replicate this study with both middle school and elementary school teachers in order to better understand the factors that shape teaching at those levels and then construct teacher education programs that better fit the needs of pre-service teachers.

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An Exploratory Study of the Level of Reflection Attained by Preservice Teachers

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Abstract

This exploratory study investigated the levels of reflection achieved over three quarters by graduate level preservice teachers. Levels of reflection were determined through analysis of their reflective journal entries on readings and field experiences. A repeated measures two factor ANOVA completely within design was used to systematically analyze changes in the level of reflection. Even without specific training in reflection and reflective thinking, some significant growth occurred in the levels of reflection as a result of asking preservice teachers simply to reflect. However, only one participant achieved the highest level of reflection.

Efforts to study and develop reflection or reflective thinking skills have been complicated by variations in the definition and use of those terms. Early in this century, Dewey (1904) introduced educators to the concept of reflection by describing it as thinking about and reflecting upon one's teaching experience. He later expanded this definition, referring to reflective thinking as "behavior which involves active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and further conclusions to which it tends" (Dewey, 1933, p. 9).

According to Van Manen (1991), reflection refers to the process by which teachers engage in aspects of critical thinking such as careful deliberation and analysis, making choices, and reaching decisions about a course of action related to teaching. Ross (1989) views reflection as "a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices" (p. 22). Shulman (1987) defines it as "a process that involves reviewing, reconstructing, reenacting, and critically analyzing one's own and the class' performance" (p. 15).

Reflection is currently viewed as an essential component of preservice teacher education programs because it is seen as the primary means by which preservice teachers become thoughtful about their experiences (Pultorak, 1993). Being reflective allows them to refine and improve their teaching. By applying critical thinking skills such as problem-solving, decision-making, and analysis from multiple perspectives to their experiences, preservice teachers can become more knowledgeable about themselves and their performance as professionals. Thus, reflection is the means by which preservice teachers may become reflective practitioners. Reflective practitioners are viewed as those who link theory to practice, balance learning and teaching styles with content, question and analyze their own practice from multiple perspectives, make decisions grounded in knowledge, and evaluate alternatives for future applications (Irwin, 1987; Reagan, 1993; Roth,

1989; Rust, 1988; Schön, 1987; Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990).

Reflective Abilities

Several researchers consider reflective abilities to be critical to the development of preservice teachers (Korthagen & Verkuyl, 1987; Richards, Gipe, Levitov, & Speaker, 1989; Ross, 1989; Roth, 1989; Rovegno, 1992; Tsangaridou & O'Sullivan, 1994). However, there is, as yet, no consensus in the field on its definition. Reflective abilities seem to represent the combination of reflective attitudes and cognitive processes that enable reflection to occur. It appears that when an action, experience, or idea stimulates an individual to become thoughtful about or to reflect upon that experience, both reflective attitudes and cognitive processes come into play.

Reflective attitudes, which Boud, Keogh, and Walker (1985) believe are an essential component of reflection, are directly related to the affective domain. Open-mindedness, responsibility for actions and/or decisions, and wholeheartedness are the three reflective attitudes that Dewey (1933) initially identified and that other researchers have more recently addressed (Cruickshank, 1987; Goodman, 1984; Ross, 1989; Ross & Hannay, 1986; Zeichner & Teitelbaum, 1982).

The following cognitive processes seem to be involved in reflection: (1) identifying dilemmas, situations or problems (Boyd & Fales, 1983; Ross, 1989; Rovegno, 1992); (2) describing and analyzing situations (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986a; Goodman, 1984; Ross, 1989; Roth, 1989; Shapiro, 1985; Sparks-Langer & Colton, 1991; Zeichner & Liston, 1987); (3) evaluating information to clarify the situation (Boyd & Fales, 1983; Goodman, 1984; Kolb and Fry, 1975; Roth, 1989); (4) re-examining experiences from multiple perspectives (Boyd & Fales, 1983; Boud et al., 1985, Ross, 1989; Roth, 1989; Rovegno, 1992; Schoen,

1983); (5) associating new knowledge with previous knowledge, integrating new knowledge into existing schemata, and appropriating new knowledge (Boud et al., 1985; Rovegno, 1992); (6) synthesizing conflicting evidence (Rovegno, 1992); (7) relating teacher's actions to student learning (Rovegno, 1992); (8) imagining new alternatives (Rovegno, 1992); (9) providing alternative explanations of a classroom event (Ross, 1989); (10) articulating arguments based on evidence (Ross, 1989); (11) solving problems, and/or making decisions (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986b; Dewey, 1933; Kolb & Fry, 1975; Parsons, 1983; Roth, 1989; Rovegno, 1992; Zeichner & Liston, 1987); (12) making inferences and developing and testing hypotheses (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986b; Kolb & Fry, 1975; Roth, 1989; Schoen, 1983; Sparks-Langer & Colton, 1991); and (13) understanding the ethical and moral consequences of teaching (Goodman, 1984; Zeichner & Liston, 1987).

Developing Reflective Practitioners

In order to become reflective practitioners, preservice teachers need to develop and use reflective abilities. As Kuhn (1986) has pointed out, "the only way to improve teachers' thinking is to involve them in it" (p. 502). Dewey (1904) emphasized that people should be taught how to think by being involved in thinking, and that it could be even more important to prepare preservice teachers to think about their work than to teach them teaching strategies.

Reflective abilities are developed by "involving student teachers in critical, reflective thinking about their work" (Bolin, 1988, p. 48) and in a variety of reflective exercises (Kuhn, 1986). Dewey (1933) found that student teachers tend to be more reflective if the experiences upon which they are expected to reflect are real. Building on this idea, Roth (1989) suggests that in order to develop reflective capabilities preservice teachers need to have opportunities to reflect on their observations during field experiences and in real school settings. According to Bolin (1988), this enables students to analyze and interpret field experiences and classroom observations with a different attitude. In addition, students also discover assumptions and arrive at implications for classroom practice (Liston & Zeichner, 1987).

For Sparks-Langer et al. (1990), asking the *why* question is essential for the development of reflective thinking in preservice teachers. If students do not understand why something worked or did not work, they will have difficulty figuring out what to do next. Along these same lines, helping preservice teachers describe what happened, why it happened (its rationale), and how it could be improved encourages them to reflect (Cruickshank & Applegate, 1981; Roth, 1989; Van Manen, 1991; Smyth, 1989).

Preservice teachers differ in their willingness and abilities to reflect about teaching (Korthagen & Verkuyl, 1987; Richards et al., 1989; Ross, 1989). The ability to reflect also varies depending on the topic (Ross, 1989). In her study, Ross (1989) reported that the students achieved higher lev-

els of reflection when they were able to apply research findings and critiques of teacher effectiveness research while acknowledging the strengths and limitations of it.

Richards et al. (1989) reported that some preservice teachers possess a natural ability to examine and critically question themselves. Other studies suggest that preservice teachers can value the role of reflection and therefore are able to improve the quality and amount of reflection (MacKinnon, 1987; Nolan & Huber, 1982; Richards & Gipe, 1988; Richert, 1988; Sebran, 1989; Wildman & Niles, 1987). As a consequence, preservice teachers can be helped to develop or improve their reflective abilities (Ross, 1990; Teitelbaum & Britzman, 1991; Wubbels & Korthagen, 1990). Reflective practice thus may be the means of developing analytical abilities as well (Ross, 1989; Tsangaridou & O'Sullivan, 1994).

In contrast, other studies found that some preservice teachers appear unwilling to reflect and are resistant to reflective experiences (Calderhead, 1992; Richards et al., 1989; Sebran, 1989; Zeichner & Liston, 1987). Zeichner and Liston (1987) believe that this resistance is due to the fact that some preservice teachers do not value reflection. Richards et al. (1989) reported that some preservice teachers are unable to reflect about their work because they see reflective assignments as meaningless and because they lack personal and psychological characteristics related to reflective abilities. These students also seem to confuse reflection with simple descriptions of classroom events.

There appear to be three factors related to the development of reflection in preservice teachers. These are: availability of time to reflect on a daily basis, time to actually develop reflective abilities, and a supportive and nonthreatening environment in which reflection occurs (Nolan & Huber, 1989; Richert, 1988; Sebran, 1989; Weade, 1987; Wildman & Niles, 1987). Reflective abilities may also be encouraged by implementing an indirect supervisory style during student teaching (Tsangaridou & O'Sullivan, 1994). Training supervisors in the use of an inquiry and reflective approach is as vital as having cooperating teachers encourage student teachers to question classroom practice. It is also important for student teachers to be exposed to, and trained within, this inquiry and reflective approach if they are to become more reflective (Zeichner & Liston, 1987). Troyer's study (1988) not only supports the need for training but also suggests that training in reflection should be introduced very early in the professional education component of teacher education programs.

A Model of the Reflective Process

Boud et al. (1985) aligned their "Model of Reflection in the Learning Process" (p. 20) with Dewey's (1933) description of a reflective activity process. They built upon Dewey's concept of reflecting on experience. This model has three broad components: (a) experiences, which are the antecedent stimuli for reflection; (b) reflective processes; and (c) outcomes, which include the consequences of be-

havior and new actions taken. The experiences component includes such things as behaviors, ideas, and feelings. The reflective processes component has three stages: (1) returning to experience, (2) attending to feelings, and (3) re-evaluating experience.

The first stage in the reflective processes component, *returning to experience*, involves remembering, reviewing, and reconstructing one's experience. This experience is described in detail, in written form, without judging. The preservice teacher is expected to view the experience from different perspectives. According to Boyd and Fales (1983), during this stage the student needs to be open to new information (which Dewey (1933) called "open-mindedness") from internal and external sources in order to process the event from multiple perspectives. This is when intervention and training can occur.

The second stage of the reflective processes component, *attending to feelings*, is seen by Boud et al. (1985) as essential to the reflective process. Feelings are viewed as promoting affective and cognitive learning. Positive feelings enhance learning, while negative feelings are obstacles to learning and hinder reflection. Therefore, negative feelings need to be removed or transformed for learning to take place. Writing can be a powerful means to discharge negative feelings (Rainer, 1980).

The third stage of the reflective processes component, *re-evaluating experience*, is vital because it includes association, integration, appropriation, and validation which determine whether the experience will become meaningful to the individual. At this stage, resolution occurs as the individual arrives at an adequate solution or a change in perspective (Boyd & Fales, 1983).

The outcomes component constitutes the end of the reflective process and prepares one for a new experience. Therefore, the outcome,

... may include a new way of doing something, the clarification of an issue, the development of a skill or the resolution of a problem. A new cognitive map may emerge, or a new set of ideas may be identified. The changes may be quite small or they may be large. They could involve the development of new perspectives on experience or changes in behavior (Boud et al., 1985, p. 34).

Assessing Reflection

The varied definitions of reflection have led researchers to develop a variety of assessment tools for determining to what extent, or at what level, reflection is occurring. For the purposes of this study, two frameworks were used to assess the levels of reflection attained by preservice teachers in, respectively, reading journals and field journals.

Ross' (1989) framework, Criteria for Assessing Levels of Reflection, was designed specifically to assess levels of reflection on theory-to-practice papers. The framework uses a three-tier leveling process with subcategories within each tier. A summary of Ross' framework is presented in Table 1.

Table 1

A Summary of Ross' Criteria for Assessing Levels of Reflection

Level 1: Low

- 1.1 give examples of teacher implementing or not implementing a finding from research;
- 1.2 describe a teacher's practice as being only partially consistent with research;
- 1.3 agree with a position taken in an article by restating the author's arguments.

Level 2: Moderate

- 2.1 provide a good critique of practice from one perspective;
- 2.2 analyze in detail a teaching practice;
- 2.3 recognize that instruction must vary based on aims and student characteristics;

Level 3: High

- 3.1 view things from multiple perspectives;
 - 3.2 recognize that teacher actions have impact beyond instruction.
-

Using this framework, Ross (1989) found that students' levels of reflection on the different papers ranged from low to high (low: 44%, moderate: 34.4%, and high: 21.6%). She explained that this variability was mainly due to the topic about which the students were reflecting. Although she acknowledged that students' abilities to reflect may change over time, her data did not show that levels of reflection changed during a semester-long course.

Although Ross (1989) reported that most (78.4%) of the papers were identified at Levels 1 (low) and 2 (moderate), she also noted that almost all students demonstrated a high level of reflection in some of their papers. Although only 22% of the papers were rated at the highest level of reflection, Ross suggested that undergraduate preservice teachers can achieve the highest level of reflection if they are able to view things from multiple perspectives, recognize the importance of making decisions based on multiple factors, and are made aware of the impact of context on teaching. She concluded that "the ability to reflect about practice does not develop in one course" (p. 30). She did point out that a single course could introduce preservice teachers to reflective thinking and help them develop their reflective abilities.

Galvez (1995) proposed a framework for analyzing how preservice teachers progress in reflection. A refined version of that framework which focuses on real school classroom settings was used for this study (see Table 2). Galvez' framework is an adaptation of earlier frameworks developed by Ross (1989) and Smith and Pape (1991). This adaptation was necessary because no framework could be identified that would allow assessment of reflection from multiple perspectives on real classroom settings, even though several authors feel that viewing experiences from multiple perspectives is critical in the reflective process (Boud et al., 1985;

Table 2
Galvez' Assessment for Levels of Reflection

Scale	Levels of Reflection
0	No mention of pedagogical concepts or skills. Comments based on self and feelings (Smith & Pape, 1990).
1	General explanation of instructional/non-instructional events in terms of personal experiences without analyzing or predicting consequences based on teaching behavior/performance (Smith & Pape, 1990).
2	Plain description of instructional/non-instructional events in a technical way without analyzing teaching performance or the rationale behind it (Ross, 1989; Smith & Pape, 1990).
3	Focuses on only one aspect of teacher behavior and arrives at implication (Ross, 1989).
4	Critiques teaching behavior from one perspective, that is from the students' in terms of its impact on students and learning outcomes (Ross, 1989) as well as how students behavior is addressed.
5	Analyzes in detail teaching behavior from the teachers' perspective during instructional and/or non-instructional time. Discriminates between effective and non-effective instruction (Ross, 1989). Analyzes how teachers handle misbehavior in a very specific way and arrives to implications about how to deal with similar situations.
6	Acknowledges that instruction is based on objectives and students' characteristics and that a variety of teaching strategies would be used to match the students' different learning styles (Ross, 1989). Analyzes students' progress and its implications related to teaching behavior, instruction, and students' characteristics and learning styles.
7	Evaluates instructional/non-instructional events from multiple perspectives. "Acknowledges impact of specific situations and contexts of learning" (Smith & Pape, 1990, p. 6). Provides recommendations/suggestions for improvement and for further implementation by using if-then-because statements (Smith & Pape, 1990).

Boyd & Fales, 1983; Ross, 1989). Galvez' framework offers ratings on a zero- to seven- point scale, moving from reflections from a singular perspective to reflections from multiple perspectives (teacher, student, parents, community).

This study was structured following Boud et al.'s (1985) Model of Reflective Processes which has three broad components: Experiences, Reflective Processes, and Outcomes. In order to be able to assess the level of reflection, it is first important to know what the students are reflecting about. They must describe something they learned or something they have experienced (Experiences). Second, they must expand on the idea or experience by reconstructing it, relating it to other personal experiences and feelings, and arriving at a conclusion by associating, integrating, appropriating, and validating that experience or idea (Reflective Processes). Third, they must arrive at an adequate solution or change in perspective (Outcomes). Ross' (1989) and Galvez' (1995) frameworks were created to assess the levels of reflection (Reflective Processes) based on an instructional event (Experiences).

The purpose of this exploratory study was to investigate achieved levels of reflection over time by preservice teachers when they were asked simply to reflect on their field experiences and course content. The specific research question was:

What levels of reflection are achieved by preservice teachers on readings and field experiences and how do the levels of reflection vary over time?

Method

This study was designed to explore changes in reflective thinking over a three-quarter period among preservice teachers who were not trained in reflection or reflective thinking. The investigation was accomplished during the middle three quarters (autumn, winter, and spring) of the five-quarter graduate level teacher certification program. During their first and last quarters (summer 1995, summer 1996), the students were involved in introductory and culminating courses respectively. The three quarters included in this study, encompassed all methods courses, field experiences, and student teaching.

Based on the Boud et al. (1985) model, readings and field experiences (Experiences) provided the context for the students' reflections, which were then expressed in their journal writing (Reflective Processes). The participants were free to implement their conclusions or alternative ideas for classroom instruction during field assignments, which included student teaching (Outcomes).

Participants

The participants in this study were 21 preservice teachers in a graduate elementary teacher certification program at one large midwestern university. Four students were males; 16 were females. The participants were at a typical age for university graduate students (range = 22-24 years),

with the exception of four nontraditional students (over age 24). The participants were enrolled during autumn (quarter one) and winter (quarter two) quarters in social studies, science, math, and language arts methods courses. The participants were also involved in one field experience during each of those quarters. Student teaching occurred during spring quarter (quarter three).

Procedures

The participants kept reflective journals as a part of their regular course work. Permission was granted to the authors to use the journal entries for this study; however, the participants were not informed about the specific objectives of the study.

During the first class meeting, in quarter one, the participants were given a 15-minute orientation to the journal writing required for social studies methods. They were told that they would be keeping two types of journals: a reading journal for social studies, and a field journal.

Participants were told that reading journals were to be handed in, weekly, for five weeks. Reading journals would contain responses to selected readings supplemental to the textbook in social studies. The participants were asked to talk about what they had learned from the readings that was most meaningful and valuable to them and to discuss ways in which they would be able to incorporate those learnings into their future teaching.

For the field journals, participants were told that they were to complete three journal entries, per quarter, for quarters one and two. These were to be handed in at the end of each quarter's field experience. During quarter three (student teaching), six journal entries were to be written per week. These would be turned in every other week for eight weeks. The field journals (which included both field experience and student teaching) would contain any instructional or non-instructional event that caught their attention, a description of it, and explanations of how it could be improved (Cruikshank, Kennedy, Williams, Holton, & Fay, 1981; Van Manen, 1991).

Throughout the study, participants had the freedom, through their field journals, to address any event, emphasize any aspect of it, state their feelings, and suggest how its handling could be improved. They were simply asked to state what they learned, and how they would implement that learning in the near future or use it to improve a particular situation.

Data Collection

The data (journal entries) for the readings were collected as planned on a weekly basis for five weeks during class sessions. Field experience journals were collected at the end of each quarter as planned; and the student teaching journals were collected, as planned, every other week for eight weeks. The principal investigator collected the data.

From each participant, five reading journal entries were collected during each quarter for quarters one and two. The instructor wrote simple evaluative comments (e.g., unclear

please expand, good point) on the journal entries and returned them to the participants within one week. Care was taken to avoid prompting or leading students to higher levels of reflection. The instructor returned papers that were sketchy and asked that they be redone or expanded.

Three field experience journal entries were collected during each quarter, for quarters one and two, and 24 journal entries were collected for the student teaching experience, quarter three. Therefore, from each participant a total of 40 journal entries were collected. This included readings and field journals. Each journal entry averaged from one-half to one typed page in length.

The reading and field journal entries were transcribed by two experienced secretaries. Before the transcription took place, in order to ensure confidentiality, the principal investigator coded each journal entry per individual, type of journal and quarter, and the name of each participant was removed. Copies were then made for each rater.

Data Analysis

The data were organized into data sets. Five data sets were created for each participant as follows: (1) the five reading journal entries for quarter one, (2) the five reading journal entries for quarter two, (3) the three field journal entries for quarter one, (4) the three field journal entries for quarter two, and (5) the 24 field journal entries for quarter three. Each participant was thus assigned a total of five ratings. In total, there were 105 data sets in this study.

The unit of analysis was a conceptual unit, referred to by Bainer and Cantrell (1992, 1993) as a reflective unit. Each conceptual unit contained a single idea or thought about a particular topic or event. The conceptual units ranged from a single sentence to a paragraph in length, which in some cases represented the entire journal entry. The conceptual units were identified by the principal investigator.

A level of reflection was assigned to each conceptual (reflective) unit. Thus, one or more levels of reflection were assigned to each journal entry. When there were multiple ratings for a single journal entry, those ratings were averaged to achieve a single level of reflection. As explained above, all journal entries of a similar type (readings or field) per quarter, were organized into a single data set. For each data set, a single overall level of reflection was assigned which was derived by calculating the level of reflection most frequently identified on the journal entries within that data set.

Raters and Ratings. Three raters were trained in the use of two frameworks for assessing levels of reflection: Ross (1989) and Galvez (1995). This process involved a two-day training of three hours per day. A standard procedure was used for training the raters on each framework. First, the framework was explained and discussed, focusing especially on the criteria to be used in assigning a level of reflection to a conceptual unit which could be part of a journal entry or a whole journal entry, as described above. Second, the raters worked collaboratively to rate several

conceptual units which were not analyzed as part of this study. Third, the raters assigned average ratings for journal entries as needed. Fourth, the raters assigned an overall rating to the combined journal entries for each data set. Fifth, practice ratings were compared, analyzed and discussed. Sixth, at the end of the final practice session, each rater was given several data sets with journal entries to rate independently. For the final practice session, the inter-rater reliability was .98 using Cronbach's alpha (Bloom, Fischer, & Orme, 1995).

All data sets were rated following a blind rating process. The inter-rater reliability was .95 (Cronbach's alpha). The data sets were organized into the two types of journals: the reading journals with two sets (quarters one and two) and the field journals with three sets (quarters one, two, and three). The journals were then paired with their respective assessment instruments. That is, reading journals were evaluated using Ross' (1989) criteria and field journals were evaluated with Galvez' (1995) framework. The investigator then coded each data set (readings: one and two; field: one, two, and three). To ensure that the raters would not be able to identify quarters, the reading data sets from quarters one and two were combined into one cluster, and the field data sets from quarters one, two and three were combined into another cluster.

Validity. Content validity and face validity for each of the frameworks were established by having three researchers in the field of teacher education examine the instruments; they agreed that each of the instruments measured aspects of teacher reflection. After the data were collected, a representative sample of the participants examined the two frameworks and agreed that the content of the instruments related to the content of their journals. After ratings of the data were completed, member check was used to corroborate results. A representative sample (25%) of the participants were asked to verify that the ratings assigned to their data sets accurately reflected what they wrote. The one hundred and five data sets were analyzed quantitatively by using a repeated measures two factor ANOVA completely within sub-

jects design on (a) the overall ratings assigned to the reading data sets rated with using Ross' (1989) framework, and (b) the overall ratings assigned to the field data sets rated with Galvez' (1995) framework. The SAS statistical program was used for this analysis.

Results

Levels of reflection achieved by the participants on the readings data sets are displayed in Table 3.

During quarter one, all the ratings were at Ross' (1989) lower level of reflection (Level 1). During quarter two, while many of the ratings remained at the lower level of reflection (Level 1) there was some movement to the moderate level of reflection (Level 2). This movement is corroborated by the means as well.

Table 4 summarizes a repeated measures two factor ANOVA which was conducted to test for completely within subjects effects on selected readings on Ross' (1989) levels of reflection.

This analysis revealed that the interaction between quarter one and quarter two reflections was statistically significant ($F(2, 40) = 7.51, p < .05$). A post-hoc Tuckey test confirmed the statistical significance at an experiment wise error rate of .05. These results indicated that Ross' (1989) level of reflection on the readings achieved in quarter two was significantly higher than the level of reflection achieved in quarter one.

Galvez-Martin's levels of reflection achieved by the participants on the field data sets are displayed in Table 5.

Some movement was observed over the three quarters towards higher levels of reflection. For purposes of clarification, Levels 0, 1, and 2 were considered the lower levels, Levels 3, 4, and 5 were considered the intermediate levels, and Levels 6 and 7 were considered the highest levels of reflection. During quarter one, most of the ratings were found between the lowest (Levels 1 and 2) and intermediate (Level

Table 3
Ross' Levels of Reflection on Readings in Frequencies, Percentages, and Means

Levels	Quarter 1						Quarter 2					
	R1		R2		R3		R1		R2		R3	
	F	%	F	%	F	%	F	%	F	%	F	%
Level 1	19	91	21	100	21	100	17	81	8	38	15	71
Level 2	2	9	0	0	0	0	4	19	13	62	6	29
Level 3	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	100	21	100	21	100	21	100	21	100	21	100
<i>M</i>	1.37		1.30		1.30		1.41		1.78		1.53	
Overall					1.32						1.57	
<i>SD</i>	0.25		0.00		0.00		0.29		0.43		0.37	
Overall					0.08						0.23	

R1 = Rater 1; R2 = Rater 2; R3 = Rater 3; F = Number of Ratings; % = Percentages

Table 4

A Repeated Measures Two Factor ANOVA Completely Within on Selected Readings

Source	<i>df</i>	<i>SS</i>	<i>S</i>	<i>F</i>	<i>P</i>
Subjects	21	1.43			
Quarter One Reflections	1	1.98	1.98	18.02	0.0004
Subjects by Quarter	20	2.20	0.11		
Quarter Two Reflections	2	0.53	0.26	3.48	0.0404
Subjects Within	40	3.03	0.08		
Quarter Reflections Within	2	0.97	0.49	7.51	0.0017*
Error	40	(2.59)	(0.07)		
Total	125	12.73			

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$.

3) levels of reflection (Level 1). During quarter two, most of the ratings were found between the lower (Level 2) and intermediate (Levels 3 and 4) levels of reflection. During quarter three, most of the ratings were found between the intermediate (Levels 4 and 5) and higher (Level 6) levels of reflection. It was observed that the ratings moved progressively from lower to intermediate and in some cases to higher levels of reflection. Overall, 90% of the participants gained in levels of reflection from quarters one to three.

The overall mean of reflection for quarter three ($M = 4.43$) was significantly higher than the means for quarters one ($M = 2.59$) and two ($M = 2.76$). This showed a growth over the three quarters of two levels (see Table 5).

Table 6 summarizes a repeated measures two factor ANOVA which was conducted to test for completely within

subjects effects on field experiences rated using Galvez' (1995) levels of reflection.

This analysis revealed that the within subjects interaction between (a) quarters one and three, and (b) quarters two and three reflections was statistically significant ($F(4, 80) = 12.78, p < .05$). A post-hoc Tuckey test confirmed that these interactions were statistically significant at an experiment wise error rate of .05. The main effects then revealed that most of the cells were significantly different. These results indicated that Galvez' (1995) level of reflection achieved in quarter three was significantly higher than the level of reflection achieved in quarters one and two. These data indicated that journal entries based on student teaching (quarter three) were written at a significantly higher level of reflection than journal entries from the field experiences during quarters one and two.

Table 5

Galvez' Levels of Reflection on Field Experiences in Frequencies, Percentages, and Means

Levels	Quarter 1			Quarter 2			Quarter 3					
	R1	R2	R3	R1	R2	R3	R1	R2	R3			
	F	%	F	%	F	%	F	%	F	%		
Level	0	0	0	0	1	5	1	5	0	0		
Level 1	4	19	7	33	7	33	3	14	3	14		
Level 2	6	29	3	14	4	19	9	43	9	43		
Level 3	4	19	6	29	6	29	3	14	3	14		
Level 4	2	9	4	19	3	14	3	14	3	14		
Level 5	5	24	1	5	1	5	2	10	2	10		
Level 6	0	0	0	0	0	0	0	0	0	0		
Level 7	0	0	0	0	0	0	0	0	0	0		
Totals	21	100	21	100	21	100	21	100	21	100		
<i>M</i>	2.91		2.48		2.38		2.48		2.48		3.33	
Overall				2.59						2.76		
<i>SD</i>	1.48		1.29		1.24		1.33		1.33		1.16	
Overall				1.21						1.13		

R1 = Rater 1; R2 = Rater 2; R3 = Rater 3; F = Number of Ratings; % = Percentages

Table 6

A Repeated Measures Two Factor ANOVA Completely Within on the Field Experiences

Source	<i>df</i>	<i>SS</i>	<i>S</i>	<i>F</i>	<i>P</i>
Subjects	21	110.74			
Quarter Reflections (One & Three)	2	130.17	65.09	20.12	0.0001
Subjects by Quarter	40	129.39	3.24		
Quarter Reflections (Two & Three)	2	0.77	0.39	0.77	0.4707
Subjects Within	40	20.12	0.50		
Quarter Reflections Within	4	19.93	4.98	12.78	0.0001*
Error	80	(31.19)	(0.39)		
Total	188	442.30			

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$.

During the data analysis, it was observed that the journals' content corresponded to the Reflective Processes component of Boud et al.'s (1985) Model and was the expected outgrowth of the first component (Experience). The analysis using Ross' (1989) and Galvez' (1995) frameworks, provided insights not only about the level of reflection that the participants achieved but also about how the level of reflection varied across quarters (Reflective Processes). This analysis also revealed that the journal entries did not represent elements of Boud et al.'s third component (Outcomes) even though the participants had opportunities to do so.

Conclusions

In this study, preservice teachers were asked to participate in reflective activities, but they were not specifically trained in reflection or reflective thinking. Over two quarters, even without training, the average levels of reflection on readings did increase significantly from Ross' (1989) lowest to moderate levels of reflection, that is from Level 1 to Level 2. Over three quarters, even without training, the average level of reflection on field experiences did increase significantly from Galvez' (1995) lowest to intermediate levels of reflection, that is from Level 2 to Level 4. These results appear to align with Dewey (1904) and Kuhn (1986) who suggest that, in effect, preservice teachers learn to reflect by reflecting.

There could be several explanations for our results. First, the results may be related to the length of the study (three quarters) which allowed sufficient time for changes to be measured. A second possible explanation may be the age, greater maturity, or experiences of some of the participants. Third, some connection between requisite cognitive ability and learning may have occurred during this period that promoted a change in level of reflection.

Fourth, the fact that the level of reflection during student teaching (quarter three) was significantly higher than the levels of reflection achieved during field experiences (quarters one and two) may be related to the nature of the student teaching experience. That is, student teachers are

totally involved in the field experience, whereas during quarters one and two, the field experiences are linked with methods courses and there is little involvement in classroom teaching. This explanation would lend support to other researchers who have found that the greatest growth in reflection occurs in the field experiences, that is, in real classroom settings (Bolin, 1988; Dewey, 1933; Roth, 1989; Liston & Zeichner, 1987).

Only one participant in the study demonstrated the highest level of reflection (i.e., analyzing teaching situations from multiple perspectives, and evaluating and adjusting one's own teaching performance in response to children's individual differences). Most participants achieved only intermediate levels of reflection.

Explanations for these results may include the following. First, they could be due to the lack of specific training for the participants in reflection and reflective thinking. Second, the participants may not yet have developed the (pre)requisite cognitive abilities that would enable them to move towards the highest levels of reflection. Third, there may exist some cognitive processes related to reflection that are not adequately measured by the two selected frameworks.

Our findings suggest that when preservice teachers are given opportunities to reflect over time, many do grow in their level of reflection even without specific training. However, it seems clear from these results that simply asking preservice teachers to reflect will not turn them into practitioners who consistently reflect at the highest levels, at least not over a three quarter period of time.

In terms of limitations of this study and recommendations for future studies, this sample size was small and the nature of the sample, being at the graduate level, limits our ability to generalize these findings to other populations. Further studies should be designed to replicate this work with undergraduate preservice teachers. A limited number of frameworks were used to assess levels of reflection, and future studies should also include other frameworks such as Van Manen's (1977) and Zeichner and Liston's (1985), which would allow direct comparison of a variety of theoretical frames. One framework should also be applied across differ-

ent types of data (journals) in order to identify possible differences in achieved levels of reflection.

Further empirical studies are needed to measure achieved levels of reflection over a longer period of time. Such studies would help to determine whether the growth rate continues when preservice teachers are given opportunities to reflect, but are not given specific training in reflection. Related studies are also needed to investigate possible relationships among cognitive developmental maturity, critical thinking skills, and achieved levels of reflection over time.

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Conversations with Project Directors

Reading Recovery

Gay Su Pinnell, Carol Lyons and Diane DeFord
The Ohio State University

interviewed by

Emily Rodgers
The Ohio State University

Reading Recovery is an early, short-term intervention literacy program. It helps the lowest achieving first grade children develop effective and efficient problem solving processes and strategies used by successful children in the classroom. The goal of the program is to bring those children who are having most difficulty developing literacy skills to a level of achievement at or beyond their peers. This way, they can participate in and benefit from regular classroom literacy instruction.

Q: Would you describe the implementation of the Reading Recovery program in the United States?

A: Marie Clay initiated the Reading Recovery program in New Zealand in the 1970s as a result of her research into the early reading behaviors of young children. The program was adopted nationwide in New Zealand in the early 1980s. In 1983 Gay Su Pinnell wrote a proposal to implement Reading Recovery in six central Ohio public school districts. As a result of the positive outcomes at the end of that pilot year in 1984-1985, the state legislature agreed to fund Reading Recovery as a state-wide program in 1985-1986. That same year, The Ohio State University mounted a program to train Reading Recovery teacher leaders. There were 28 people in the first training program.



Diane DeFord

Q: How has the program grown in the U.S. since its pilot year in 1984?

A: It's staggering how it has expanded. In 1984-1985, the program's pilot year, just one school district in Ohio and 16 teachers were involved. That first year, 110 children were served by Reading Recovery. By comparison, 99,617 children were served by the program in the United States in 1995-1996, nearly 100,000 more than the implementation year. Over the last 14 years, 2939 school districts involving 9062 schools and 14,153 teachers have participated in the Reading Recovery program.

Q: The name "Reading Recovery" begs the question: What are children recovering from?

A: There are many ways the term "recovery" can be used. The U.S. tends to think of a medical terminology before other possible uses—recovery from a disease, for example. However, in New Zealand where the program originated, "recovery" is a nautical term. It means to "right one's course" and is not to be associated with the medical uses.

Q: How have you gone about securing funding for the program?

A: Initially, for the pilot year, funding was secured through a combination of grants from several foundations. Following the pilot year, we received a grant from the Ohio Department of Education to provide further training and a research grant from the MacArthur Foundation. Ongoing funding is definitely a concern because the scope of our work and responsibility have continued to expand but the funds have declined.

Q: How is Reading Recovery different from traditional remedial reading programs where students are pulled out from their regular classrooms for extra help with reading?

A: It is both similar and different. It is a "pull-out" program in that a teacher must work one-to-one with a child, and a quiet place insures the child's ability to attend carefully in every lesson. However, it is an early intervention program,

not a remedial program. In this sense, Marie Clay, the program's developer, wanted a program that would intervene early while the least difference between the child's current abilities and the average performing child might be made up in a short program. Most children are in Reading Recovery from 12-15 weeks, although 20 weeks is an outside limit. This insures that the child will rapidly achieve accelerative learning, and lessen the need for further remedial services. If, however, after an intense program of this nature it is deemed that the child would benefit from a longer service program such as special education or more typical remedial services, the child may be referred to that program.



Gay Su Pinnell

Q: What are the theoretical underpinnings of Reading Recovery instruction. Where does it fit in the body of current research on early reading and writing?

A: The fundamental underpinnings of Reading Recovery include 35 years of research in language learning which have illustrated the theory of learning as a constructive process. The early language research demonstrated that children use language to communicate meaning. Marie Clay's early research demonstrated that young children construct meaning as they read. Bruner's theory of serial order, Luria's theory of the complex brain functioning in speech and writing processes, theories of perceptual and cognitive processing and theories about phonology have all contributed to Clay's theory of text reading. Clay's theory of literacy acquisition incorporates theories of other scholars (e.g. Bruner, Luria, Elkonin, Goswami, Bryant, Smith) and stresses that during acquisition of literacy, the child must learn what to attend to in the text and how to access that information. She calls these processes "divided attention".

The current research on early reading is changing, so one of the challenges is to keep up with and incorporate

current research into the program. Differences in editions of Clay's published material reflect the theoretical changes that have occurred over time. These theoretical changes are also evident in the refinement of the Reading Recovery procedures. The changes are not haphazard but the result of careful evaluation over time. The changes in Reading Recovery practice are gradually assimilated through ongoing professional development of teacher leaders and Reading Recovery teachers.

Q: As program directors of Reading Recovery, you have conducted a considerable amount of research into the effectiveness of the program. What have been your major findings?

A: Reading Recovery has been proven an effective program for first grade children. In tests against other one-on-one tutorials, Reading Recovery was significantly better (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). In 1995-1996, we were successfully able to bring 57% of all children who received Reading Recovery lesson, to within the average of their class. This reference includes every child who received a Reading Recovery lesson in the United States during that school year, even if the child received just one lesson. Few programs have this stringent a requirement, not this type of success.



Carol Lyons

Q: Since 1984, over 200,000 first graders in North America who received a Reading Recovery program reached the average reading levels of their peers in about 16-20 weeks. How do you account for this accelerated progress?

A: There are several factors, but the highly skilled decision-making of teachers is the major influencing factor. The teachers report that ongoing professional development keeps them apprised of most recent developments, and makes skillful teaching a continuous pursuit. In addition, there are issues of

implementation that can facilitate this program. For example, a site needs an adequate number of teachers serving the proportion of children in greatest need. This may vary by site, but usually 10-15% is a initial goal of most schools. If a school's level of need is 20% and their level of service is only 5%, the effectiveness of the program may suffer.

Q: Since Reading Recovery instruction has been demonstrated to be so effective, why is it limited to first graders? What about older students who are having difficulty with reading?

A: Reading Recovery is limited to first graders because that is when children are most likely to catch up to their peers. You have to put efficiency and economy in a *prevention* mode, not a *remediation* mode.

Can it work with older students? Yes, but it would take longer than 12 - 20 weeks of individual instruction. If you took a Reading Recovery teacher's understanding of the reading and writing process and their understanding of developing self-regulatory behaviors and what that means, certainly Reading Recovery would work. You would get improvement in older students' ability to read. We have two dissertations that did this with adults. It's not Reading Recovery anymore, though. It's taking the knowledge and some of the procedures as well as the rationales behind those procedures and applying them to a different population.

Q: In a recently published document, *Learning Disabilities—A Barrier to Literacy Instruction* (1995), the International Reading Association identified Reading Recovery as a program that reduces the number of students who are labeled learning disabled. Is there evidence that Reading Recovery can reduce the learning disabled population? If so, how do you account for this effect?

A: There is research that shows that it is doing that (see Lyons, in press). But there are problems collecting LD data. It's not as readily available because school districts often do not release retention and LD referral data to the public.

Can Reading Recovery reduce the learning disabled population? Yes, because in our view the children were mislabeled in the first place. They never had a learning disability, they were instructionally disabled. For example, if the instructional approach is to focus on learning letter sounds and words in isolation then children who are most at risk and who are vulnerable to instruction will rely on these unproductive reading strategies.

In 1986-1987, 110 children were served by the Reading Recovery teacher-training class in Ohio. One third of these 110 children had been labeled "learning disabled". Yet 83% of them successfully completed the program and were reading at or near the average reading levels of their peers.

Q: What do we know now, 13 years after the program was first implemented about the long term effects of Reading Recovery? Do Reading Recovery students maintain their gains in reading after first grade?

A: In early 1998 an annotated bibliography of follow-up studies on Reading Recovery students will be available. The Ohio follow-up study has control groups (see Reading Recovery in Ohio, 1997). Three others that come to mind, are in Massachusetts (see Reading Recovery in Massachusetts, 1995-1996); Texas (see Reading Recovery in Texas, 1988-1996), and New York (see Jaggar, Smith-Burke, Ashdown, & Simic, 1996). Each of them used their state assessments to see how Reading Recovery children, who were discontinued, do. They've maintained their gains.

Q: Wilson and Daviss, authors of *Redesigning Education*, have stated that "Reading Recovery is the best evidence yet of the direct link between good design and educational excellence" (see Wilson & Daviss, 1994, p.76). Would you comment on the design of the program and how this is linked to the effectiveness of Reading Recovery.

A: Because Reading Recovery invests in teachers' professional development (intense training, continuous professional development) and maintains an extensive research base, it is able to make each implementation an effective one. No teacher is alone in this program. The networks within a given district, through the teacher leader in the district, the state department in each state, to the training institution, makes this program unique.

Q: Michael Fullan has described the challenges in bringing about long-lasting change in education. Have you faced such challenges with implementing Reading Recovery? How have you dealt with them?

A: Every year, there have been challenges related to change. At first, the challenges were local and were related to administrative competition, program competition, etc. We dealt with them by forming relationships and bridges with individuals. We've found that the most powerful way to achieve collaboration is to establish a personal relationship with individuals and to focus on what we can do together. That becomes more and more difficult as the project gets larger.

There have been challenges at every level and in each period of growth. Challenges such as transporting children for the "behind the glass" session shook everyone up in the beginning. We no longer get calls about that factor. Also, the long term training was just seen as unnecessary. Now, everyone wants year long training. Other challenges have surfaced. Right now, Reading Recovery is caught up in the discussion over phonics vs. whole language. The issues are muddied because special programs like Reading Recovery are being confused with classroom approaches that include all children. We can not design classroom approaches based solely on what we have learned from special education. Reading Recovery fits into that. We simply wouldn't want all children to have Reading Recovery or anything like it.

Other challenges come from the creation of bureaucracy, even within Reading Recovery, as it grows larger. We are always trying to balance individual agendas and ambitions with the good of the whole.

Education, and therefore any act of teaching, must be accountable. So one of the challenges is to keep this system accountable at every level, to make necessary improvements, and to meet the needs of children in very diverse settings. Consequently, while there is a model of implementation and national guidelines that all teachers, teacher leaders, and trainers must use, there also must be a way to flexibly relate to each new site, each new teacher, and each new student to keep evolving to meet new demands. Other challenges are to keep the public we serve informed, to conduct research to address important questions related to program success, and to keep educational systems working together.

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Mid-Western Educational Researcher

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The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

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Nontraditional Students in Higher Education: Meeting Their Needs as Learners

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Abstract

The research literature indicates nontraditional students in higher education are different from their traditional counterparts. Understanding our university clientele is important in being able to meet their needs. Instructors are encouraged to analyze their teaching strategies and to incorporate those which can further aid older students in their educational pursuits.

Terms the general public may use to describe a college student could include career directed, young, eager, rebellious, inquisitive, partier, and idealistic. While these descriptors may be somewhat accurate, the majority of the words are intended to describe only a portion of the college population—the stereotypical traditional-aged college student. Movies and television shows further depict college students in a very customary light according to age. Often, the college experience is seen as the last time to fully enjoy life without everyday realities coming into play. Increasingly, this picture is not the reality for a large number of college students. . . the nontraditional-aged persons attending institutions of higher education.

Nontraditional students are defined as those individuals who are age twenty-five and older and are either working on a bachelor's degree or post-baccalaureate non-degree program (Bishop-Clark & Lynch, 1992; Beder & Darkenwald, 1982; Breese & O'Toole, 1994). They are often referred to as older students, returning students, or adult students. The number of nontraditional students in colleges and universities has reached forty-five percent of all undergraduate students enrolled in higher education institutions. This is an increase of seven percent over the past decade (Rose, 1994; U.S. Department of Education, 1994). It is estimated that by the year 2000, over twenty million older students will be enrolled (Grottkau & Davis, 1987; Haviland & Mahaffy, 1985).

The nontraditional student population is a significant group in undergraduate programs in terms of both numbers and percentage of enrollment. As these numbers continue to increase, undergraduate institutions must look at the uniqueness of the adult learner and attempt to meet their needs. The purpose of this paper is to review the research conducted on nontraditional students in an attempt to help individuals better understand and work with this large sector of the higher education population in the classroom.

Historical Background

Prior to 1940, adults sought out program alternatives such as evening classes, special "adults only" offerings, off-campus programs, and correspondence study (Kasworm,

1980). Colleges and universities during this time focused on the traditional 16-24 year old student. Two events in the past 50 years have changed the look of college campus populations. First, in the mid-1940's a shift toward nontraditional students in daytime undergraduate education began with the enactment of the "GI Bill". Thousands of veterans entered daytime collegiate programs accounting for a total of 27.6% of the entire undergraduate enrollment in the 1945-46 academic year (Kasworm, 1980). A second significant event in undergraduate programs occurred from 1960-72. It was the emergence of "re-entry women". A "three fold gain" of non-traditional enrollment was registered during that time period by women students who were 25 to 34 years of age. Further the Women's Bureau of the U.S. Department of Labor (1974) estimated this gain was probably exceeded by women over 35.

This growth in nontraditional student population has continued in recent years. Contributing factors relate to changing career and leisure expectations, advances in technology and business operations, changing roles of men and women in society, and the rise in consciousness regarding life quality (Hall & Miller, 1989; Iovacchini, Hall & Hengstler, 1985).

Profile of the Nontraditional Student

Adult students are a highly diverse group that don't easily fit into a neat demographic, homogeneous profile. Yet, several studies have attempted to further define characteristics of the nontraditional student.

Sewall (1986) surveyed 1007 degree seeking adults to determine a profile of who these nontraditional students are. Results showed that nearly three-quarters of the respondents were between 25 and 34 years of age. After age 35, women were more likely to enroll than men by a ration of nearly three to one. Approximately two-thirds of the nontraditional-aged students were married. Seventy-four percent of the adults had children and 66% were employed—43% full time and 23% part time. In addition, nearly two-thirds had previously attended a college or university before dropping out or not completing their degree for some reason.

Differing results pertaining to age proportions were found by Charmer (1980) and Cross (1980), who revealed that one-half to three-quarters of the adult participants in undergraduate higher education were over 35 years of age. Cross (1981) also found socioeconomic differences between the older and traditional-aged students. Degree seeking adults typically come from working class backgrounds and, for the most part, are first generation college students. Parents of the traditional college students have tended to be better educated than parents of nontraditional students.

The major reasons cited for college entry by the older students ranged from developing a new career, wanting to learn, and having the satisfaction of obtaining a degree. Although reasons varied, job and family circumstances accounted for the majority of reasons cited for returning to school (Sewall, 1986; Hu, 1985; Osborne, Cope & Johnstone, 1994).

Typically the older student attends college on a part time basis. However, many institutions are reporting more full time adult students in their programs (Grace & Fife, 1987).

Solomon and Gordon (1981), and Bers and Smith (1987), found the desire to live at home, the specialized programs offered at the institution, low tuition, and the availability of financial aid were the components considered important by nontraditional students in selecting a college. Traditional students tended to indicate that the academic reputation of the college was important in their selection.

A significant portion of adult students must cope with dual responsibilities of job and family in addition to attending school. These factors play an important role in the older student's decision to delay entry to higher education and frequently trigger their return. Gustafson and Sorgaman (1983) and Osborne, Cope and Johnstone (1994) found that older students report being more concerned about flexible class scheduling, child care problems, and the need for credit for experiential learning than traditional students. In addition, nontraditional students were found to have many of the same problems reported by their younger counterparts: high concern in having too little time for course work and lack of information regarding career paths. Due to all these factors, it is not surprising that older students report difficulty in integrating into student life (Bradley & Cleveland, 1992; Vanderpool & Brown, 1994).

As more women enroll in higher education, new problems have been encountered. Gerson (1985) found that nontraditional women experienced greater role gratification but also encountered greater strain in their multiple roles. Robertson (1991) reported that women and men often take different routes when entering and completing their programs in postsecondary education. Women are more likely to have more interruptions in their academic career that are attributed to more diverse role demands and greater relationship responsiveness by women (Hatch, 1990; McBride, 1990). However, Breese and O'Toole (1994) report that women also seek out higher education as a coping mechanism to deal with a role transition in their own lives. Examples of these role transitions include: divorce, death, children leaving home, and/or the youngest child starting school. Perhaps

not surprising is that nontraditional females reported a significantly higher degree of dissatisfaction with institutional climate, especially during their first year (Gustafson & Sorgaman, 1983; Wilkie & Thompson, 1993).

Several researchers (Fujita-Starck, 1996; Morstain & Smart, 1974) caution instructors to not heavily rely on adult student demographics as their means to understand this learner. Instead, they urge us to analyze the nontraditional's motivation for attending higher education institutions. Without this information, they say, erroneous generalizations may be made.

The Nontraditional Student in the Classroom

Historically, American colleges and universities focused curriculum programs and institutional mission on the younger adult, 16-25 years of age. Older adult needs were to be met by continuing education programs. These programs attempted to link together, the adult, the community and the university (Kasworm, 1980).

Higher education for adults is based on the following beliefs:

1. Adults are capable, motivated learners.
2. Off-main-campus and nontraditional classroom settings can provide effective learning experiences.
3. University resources can be relevant to adult and community needs.
4. Teaching-learning strategies which recognize the unique characteristics of adults are required. These strategies incorporate variable access and time frame flexibility.
5. Adult students are necessary and important to colleges and the public. (Knowles, 1980).

Not all educators agree with these statements, as common misunderstandings are associated with nontraditional students. Kasworm (1980) noted some university faculty suspected that older students were not as qualified for undergraduate education due to age, time lapse from learning activities, or declining intellectual abilities. These suspicions are not supported by research. In fact, research contradicts these beliefs.

The reality is that adult students in higher education study more hours per week than do traditional students (Iovacchini, Hall & Hengstler, 1985). This is evidenced when grade point averages of younger and older students in the same undergraduate degree programs were compared (Halfner, 1962). GPA's of older students were significantly higher than the young students in total performance. These findings were corroborated by Ryan (1972) and Darkenwald and Novak (1997), who also found a positive relationship between age and levels of achievement.

Miller (1989) and Nordstrom (1989) reported that nontraditional students are more internally motivated to learn, prefer informal learning, and are more goal-directed than traditional students. Older students appear to have "a motivation, an excitement, and a love of learning" (Bishop-Clark & Lynch, 1992, p. 114). This may explain why nontraditional students are more prompt and regular in class atten-

dance (Glass & Rose, 1987) and why they perceive the classroom environment more favorably than traditional students (Stage & McCaffery, 1992).

Faculty who work with older students perceive them as more motivated, pragmatic, self-directed, goal oriented, and competent than traditional students (Beder & Darkenwald, 1982; Bodensteiner, 1985; Pew Charitable Trust, 1990; Raven & Jimmerson, 1992). Jacobs (1989) reported that nontraditional students were viewed as her “best students” as “they responded, reacted, opined, and participated in the process of education” (p. 329). However, not everyone views them as a positive force in the classroom, as some students on a college campus referred to adult students as “DAR’s—Damned Average Raisers” (Jacobs, 1989, p. 331). Interestingly, while some studies show that faculty members perceive differences between nontraditional and traditional students (Sisco, 1981; Swift & Heinrichs, 1987; Pew Charitable Trust, 1990; Raven & Jimmerson, 1992), other studies indicate faculty often feel there is no need to teach older students differently from younger students and do not alter their methods of teaching (Galerstein & Chandler, 1982; Conti, 1985; Gorham, 1985). This implies that although instructors find the nontraditional group better students, they often do not change their teaching to a style which may benefit adults’ learning.

The opinion that teaching adult students is different from teaching children is based on a principle called andragogy (Knowles, 1980). Andragogy was a word created by European educators, who saw the need for a model for adult learners that was distinctive from pedagogy. Pedagogy refers to the art and science of teaching children, while andragogy refers to the art and science of teaching adults. Assumptions regarding adult that are central to the andragogy model include that:

1. Learners’ self-concept moves from being a dependent personality toward being a self-directed human being.
2. Learners’ accumulate a growing reservoir of experience that becomes an increasingly rich source of learning.
3. Learners’ readiness to learn becomes oriented increasingly to the developmental tasks for their social roles.
4. Learners’ time perspective changes from one of personal application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject centeredness to one of performance centeredness.
5. Learners’ are motivated to learn by internal factors rather than external ones (Knowles, 1985).

Andragogy suggests a teachers’ role which is more responsive and less directive. The model encourages self-directed learning at high levels. The adult student should have input regarding content, methodology, learning assessment techniques, etc. (Gorham, 1982). Further, Beder and Darkenwald (1982) cited eight differences in teaching adults as opposed to teaching their younger counterparts. They include: a) greater use of group discussion; b) less time spent on classroom discipline; c) more variety of teaching technique; d) less time spent on giving directions; e) more relating of material to life experiences; f) more flexible

instructional activities; g) more adjustments made in instructional content in response to student feedback; and h) less emotional support provided to individual students.

Additional research on nontraditional students in colleges and universities appears to support many of the andragogical principles. Several researchers (Kasworm, 1980; Backus, 1984; Birkey, 1984) found that older students indicated stronger preferences for dealing with theoretical problems and concerns and greater capacity for critical thinking during problem solving. They are more likely to initiate interaction with the college instructor (Gorham, 1985; Bishop-Clark & Lynch, 1992) and less likely to blindly accept information without challenge (Richter-Antion, 1986). Loesche and Foley (1988) reported that nontraditional students prefer to organize their own learning experiences, while younger students indicated a preference for more teacher directed experiences. Adult students identified characteristics of effective instructors who use student centered experiences. These include: a) relevance of material, b) encouraging participation, c) being open to questions, and d) showing concern for student learning (Donaldson, Flannery, & Ross-Gordon, 1993). Older students also prefer realistic, tangible learning situations (Holtzclaws, 1980), hands-on practical examples and discussion (Bishop-Clark & Lynch, 1992) and problem-based learning (Fiddler & Knoll, 1995).

In a 1994 study, Richardson that found adult students use what he calls a “deep approach or a meaning orientation” (p. 318) towards coursework. This is in contrast to the traditional student who employs a “surface approach or a reproducing orientation”. Richardson (1994) explains this phenomena by pointing out that nontraditional students are more motivated by intrinsic goals. Their prior life experiences help promote the “deep approach” towards course work. In contrast, the younger students develop a “surface approach” to learning while in high school and evidently carry this trait forward in higher education.

Conclusions

As can be seen, there are numerous differences between traditional and nontraditional students. Further while nontraditional students show similar problems to traditional students regarding lack of time for course work, older students apparently experience more role diffusion and time constraints due to family and job situations.

Those who work with both traditional and nontraditional students may want to examine what is currently being done to accommodate the needs of both age groups. Changes may need to be made to ensure that all individual needs are being met. Many articles written on nontraditional students focus on changes involving support services (e.g. Brenden, 1986; Scholssberg, Lynch & Chickering, 1991; Bova & Phillips, 1984; Rawlins & Lenihan, 1982; Vilella & Hu, 1991, Vanderpool & Brown, 1994). While these components may be necessary in accommodating adult learners, little attention has been given to modifying how course content is delivered. Instructors of older students need to contemplate the theories of adult learning and incorporate these

elements in their classrooms. They should include more group discussions and offer a variety of assignments from which students can choose. Additionally, research needs to be undertaken to further investigate strategies that will aid in the knowledge development of nontraditional individuals in higher education.

This does not imply that the needs of the traditional-aged individual be forgotten. Flexibility seems to be a recurrent theme in trying to achieve maximum learning for all students in higher education. Perhaps analyzing the four teaching strategies that have been identified by Bishop-Clark and Lynch (1992) in creating a conducive learning environment for nontraditional and traditional students will aid us in this growth. These were: developing more personal contact with students; allowing students to discuss differences between traditional and nontraditional students; becoming equitable in how each group is approached; and increasing awareness of student similarities regardless of age.

As older students continue to enter the "ivory tower", we, in higher education, should commit ourselves to understanding and modifying existing conditions to better serve all students across all ages. The university is in part a business structure. As a business, we should be serving all our customers to the best of our ability.

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Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model

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Abstract

The purpose of this study was to evaluate the changes in the teacher efficacy levels of teachers exposed to an instructional model referred to as FOCUS. The analysis revealed that a majority of the participants had pre-treatment efficacy scores that corresponded to higher post-treatment efficacy scores, on at least one of the two efficacy scales, for the participants who were exposed to the FOCUS model. These finds, although they should only be considered preliminary due to the nature of the research design employed in this study, do suggest the need for further study of the FOCUS model's impact on teacher efficacy.

Introduction

In some of the earliest work on teacher efficacy, the Rand Corporation researchers defined teacher efficacy as “the extent to which the teacher believes he or she has the capacity to affect student performance” (McLaughlin & March, 1978, p. 84). Considerable researcher effort has been given to the appropriate conceptualization and measurement of this teacher efficacy construct. As noted by Ross (1994) “the majority of teacher efficacy researchers derive their conceptions from Bandura’s (1977) theory of self-efficacy (p. 3). Bandura suggests that self-efficacy consists of two components: Outcome expectations and efficacy expectations. The outcome expectations are an individual’s belief that certain behaviors will produce particular outcomes. On the other hand, the efficacy expectations are an individual’s belief about his or her own ability to bring about an expected outcome.

Ashton and Webb (1982, 1986) extended Bandura’s theoretical framework of self-efficacy to teachers. They suggested that one of the two components of a teacher’s sense of efficacy is a belief that certain actions undertaken by teachers in general will lead to student learning. This type of efficacy, which Ashton and Webb (1982) and Webb (1982) referred to as teaching efficacy, is close to Bandura’s outcome expectations. The second dimension of a teacher’s sense of efficacy, as discussed by Ashton and Webb (1982), is a teacher’s belief that he or she will be able to bring about student learning. This dimension, which Ashton and Webb labeled personal teaching efficacy, relates to Bandura’s efficacy expectations.

Gibson and Dembo (1984) developed an instrument that would measure the two dimensions of a teacher’s sense of efficacy that were discussed by Ashton and Webb (1982). Their work resulted in an instrument that contained 16 statements. The instrument could be self administered with the respondents reacting to each statement by using a 6-point

Likert scale. Gibson and Dembo stated that one set of nine statements that reflect the teacher’s sense of personal responsibility in student learning corresponds to Bandura’s efficacy expectations. The other seven statements measure a teacher’s view concerning the limitations that teachers in general encounter in their abilities to influence the education levels of students because of external factors. These seven statements corresponded to Bandura’s outcome expectations.

A number of other instruments have been designed by researchers to measure a teacher’s sense of efficacy (Armor, Conry-Oseguera, Cox, King, McDonnell, Pascal, Pauly, & Zellman, 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Rose & Medway, 1981; Guskey, 1988; Riggs & Enochs, 1990; Vitali, 1993). As noted by Benz, Bradley, Alderman, & Flowers (1992), the use of these various instruments has created a problem in interpreting the results of teacher-efficacy studies, at least insofar as drawing study-to-study conclusions.

In spite of this measurement problem, considerable and consistent evidence exists that teacher efficacy influences teacher and student outcomes (Ross, 1994). A number of studies have found relationships between efficacy levels of teachers and dimensions of current conceptions of good teaching practices. Riggs and Enochs (1990) and Guskey (1987) found that teachers with high levels of efficacy were more inclined to use activity-based methods and mastery learning, respectively. Guskey (1988) reported that teachers with higher levels of efficacy expressed more positive attitudes towards curriculum implementation. A study by Schriver (1993) indicated that teachers with higher efficacy levels were more knowledgeable of developmentally appropriate curricula. A study by Korevaar (1990) found that teachers with high personal teaching efficacy scores were more likely to confront student management problems.

Other studies have reported positive relationships between teacher efficacy levels and student cognitive achievement and affective growth. Armor et al. (1976) reported that teachers' sense of efficacy was strongly and statistically significantly related to students' increases in reading achievement. Ashton and Webb (1986) reported that teaching efficacy and personal efficacy were significantly related to student mathematics and language achievement, respectively. Moore and Esselman (1992) and Ross and Cousins (1993) also found significant positive relationships between teacher efficacy and student achievement in mathematics.

A number of studies have reported significant positive relationships between a teacher's sense of efficacy and the students' affective development. Ashton and Webb (1986) and Roeser, Arbretton and Anderman (1993) found that teacher efficacy was positively related to student motivation. Miskel, McDonald and Bloom (1983) found a positive link between teacher efficacy and the students' increased self-esteem was discussed in a study conducted by Borton (1991).

Since relationships have been reported between the levels of efficacy expressed by teachers and their performances as educators and the academic performances of their students, an important issue to investigate is whether teachers' efficacy levels can be changed through educational programs. As noted by Ross (1994) in his review of 88 studies conducted on efficacy of teachers, "the results of attempts to change teacher efficacy have been mixed" (p. 17). Ross suggests that, as proposed by Vosniadou and Brewer (1987), in order to change efficacy levels of teachers, a radical restructuring in conceptions about students, teachers and learning may be required.

We also believe that these mixed results could be, at least in part, due to the lack of testing for the existence of an interaction effect between the participants' pre-treatment efficacy levels and the methods of instruction to which the participants were exposed. That is, the ability of a method of instruction to change a participant's efficacy level may be affected by that participant's pre-exposure efficacy level. Without the use of appropriate analytical techniques to investigate this interaction effect, the ability of the method to change the efficacy levels of participants may not be revealed through the data analysis.

The purpose of this field study was to determine whether the personal and teaching efficacy data of the participants exposed to the instructional model called FOCUS, which was developed by Russell (1992, 1994), indicate that the model may have an effect on the efficacy levels of participants. In addition, the analyses conducted in this study placed special emphasis on the interaction effects between the methods of instruction and the participants' two types of pre-treatment efficacy scores.

Research Method

A nonequivalent control group quasi-experimental design, as discussed by Campbell and Stanley (1963), was

employed to assess the ability of the FOCUS model to impact the efficacy levels of participants. The paradigm for this design is as follows:

$$\frac{O_{1,2} X_F O_{3,4}}{O_{1,2} X_C O_{3,4}}$$

where:

1. $O_{1,2}$ represents the pre-treatment personal efficacy and teaching efficacy measurements.
2. X_F represents the participants exposed to the FOCUS method of instruction.
3. X_C represents the participants not exposed to the FOCUS model, which constituted the Control Group.
4. $O_{3,4}$ represents the post-treatment personal efficacy and teaching efficacy measurements.

The 68 study participants, who were part of either the Control Group or the FOCUS Group, were teachers who were enrolled in graduate level classes offered by the Education Department of Ashland University during a summer term. Ashland University is located in north-central Ohio, which contains rural, suburban, and urban school systems. Twenty-nine of the 68 participants were not exposed to the FOCUS model during or prior to the summer term in which the study was conducted. These 29 participants, who taught in grade levels that ranged from kindergarten to the twelfth grade, served as the Control Group. The other 39 participants were exposed to the FOCUS model in a curriculum course during the same academic summer term. These 39 participants, who also taught in grade levels that ranged from kindergarten through the twelfth grade, constituted the treatment group. This treatment group was referred to as the FOCUS Group.

As noted by Campbell and Stanley (1963), "Design 10 [the nonequivalent control group design] should be recognized as well worth using in many instances in which Designs 4,5, and 6 [true experimental designs] are impossible" (p. 47). The manner in which the groups were formed and treated in this study, however, requires one to be aware of certain internal validity problems that may provide alternative explanations for any differences found between the post-treatment efficacy levels of the groups. These internal validity concerns include possible differences between the groups with respect to the following: (a) relevant characteristics of the participants including pre-treatment efficacy levels, age, years of experience, gender, and motivation, (b) the instructors to whom the groups were exposed during the summer term in which the study was conducted, and (c) the number and combination of graduate classes that the participants completed during the summer term.

With respect to relevant characteristics of the participants, various studies (Anderson, Greene and Loewen, 1988; Raudenbush, Rowan and Cheong, 1992; Beady and Hansell, 1981; and Chester, 1991) indicated that a participant's gender, number of years of experience, and age may effect participants' efficacy levels. A summary statistics of these

Table 1

Mean and Standard Deviation Values for Age, Years of Experience, Gender and Efficacy Scores

Variable	Groups	
	Control Group	FOCUS Group
Age ^a	35.4 (7.94)	42.3 (7.56)
Years of Experience ^b	10.5 (6.56)	14.2 (7.59)
Gender	.55 ^c	.69 ^c
Pretest Personal Efficacy Scores	39.31 (7.16)	38.9 (6.93)
Pretest Teaching ^d Efficacy Scores	23.24 (4.50)	24.71 (4.48)

^aOne educator in the FOCUS Group failed to indicate his or her age.

^bTwo educators in the Control Group failed to indicate their years of teaching experience.

^cThe gender value represents the proportion of female educators.

^dThe final scores for one teacher in the FOCUS Group were identified as outliers and, therefore, excluded from these figures.

variables for the participants in the Control and FOCUS Groups are contained in Table 1.

Although all of the participants in this study were teachers who were enrolled in graduate-level courses, the participants differed on various characteristics and experiences other than their exposure to or lack of exposure to the FOCUS model. Although the differences between the gender composition of the two groups and the mean pre-treatment personal and teaching efficacy scores were not statistically significant at the .05 level, the differences between the ages and years of experience of the participants in the two groups were statistically significant. The importance of these differences were somewhat ameliorated by the fact that subsequent regression analyses revealed that age, years of experience, and the two-way interaction effects between those variables and the group variable did not account for a statistically significant amount of unique variation in either of the post-treatment efficacy scores. These regression results, as well as the lack of statistically significant differences between the groups with respect to gender and the mean pre-treatment teaching and personal efficacy scores, increases the plausibility of the comparable-groups assumption. In spite of this fact, it is important to note that due to the lack of control over the other internal validity concerns, the findings presented in this study should be considered as preliminary.

The type of participant included in this study should be noted when evaluating its external validity. The 68 participants in this study were teachers who were enrolled as part-time students in graduate level classes offered by Ashland University, which is located in north-central Ohio. The grade levels taught by these participants ranged from kindergarten to twelfth grade.

Instruments

As previously mentioned, various instruments have been used to measure the level of a participant's sense of efficacy. In this study, the Teacher Efficacy Scale, which was devised by Gibson and Dembo (1984), was used. As indicated by the research paradigm, each educator who participated in this study completed the Teacher Efficacy Scale at the beginning and end of the summer academic term. This instrument required each participant to rate each of 16 statements on a 1 (strongly disagree) to 6 (strongly agree) scale. The ratings obtained from the first nine statements were summed to obtain a personal efficacy score for each participant. A high score on these nine statements was interpreted to mean that the participant had a high level of personal efficacy, and a low score would indicate that the participant had a low level of personal efficacy. The mean and standard deviation values for the pre-treatment personal efficacy scores for the participants in the Control and FOCUS groups are listed in Table 1.

The other seven statements were used to measure a participant's teaching efficacy score. The total score on these seven items for each participant was subtracted from 42. This procedure produced a teaching efficacy score that would be high for a participant who had a high level of teaching efficacy, and the score would be low for a participant who had a low level of teaching efficacy. The mean and standard deviation values for the pre-treatment teaching efficacy scores for the participants in the Control and FOCUS groups are also listed in Table 1.

Gibson and Dembo (1984) reported in their study that an analysis of internal consistency reliability values produced Cronbach's alpha coefficient values of .78 and .75 for the

personal efficacy scores and teaching efficacy scores, respectively. An internal consistency analysis of the pre-treatment personal and teaching efficacy scores recorded for the participants in this study produced Cronbach alpha values of .88 and .56, respectively.

With respect to validity of the personal and teaching efficacy scales, Gibson and Dembo (1984) stated that a multitrait-multimethod analysis supported both convergent and discriminant validity of the instrument. Although an analysis of the efficacy instrument's validity was not conducted in this study, it should be noted that both the validity study conducted by Gibson and Dembo and this study involved teachers.

Control and FOCUS Groups

Teachers who were enrolled in graduate-level classes and who had never been exposed to classes that specifically employed the FOCUS model as the basis of instruction served as the Control Group. Teachers who were enrolled in two sections of a graduate-level curriculum course were exposed to the FOCUS model of instruction. This course was a survey course in curriculum development that encompassed the elementary, the middle, and the high school levels. These classes constituted the experimental group, which was identified as the FOCUS Group. The participants in the FOCUS Group were exposed to 36 hours of instruction during a summer term.

Participants in the FOCUS Group were exposed to a relaxed classroom environment where they were treated as valuable participants in the learning process. Each topic in the curriculum course was approached from a receiver-oriented perspective as suggested by Ausubel, Novak, and Hanesian (1978). Once the participants' levels of knowledge were determined, course topics were further explored by using activities and instructional strategies, which were designed to match the participants' various learning styles as described by Kolb (1984), McCarthy (1981), and Dunn, Dunn, and Price (1977). After a given topic was explored, the course facilitator demonstrated how the various instructional and/or classroom management practices could be used in the participants' classrooms. The participants were then asked to design their own plans from this information. In addition, they were also expected to write journal entries throughout the course. The facilitator collected the journals and gave feedback to the participants prior to the next session. This activity allowed the participants, as well as the course instructor, to track their progress throughout the course.

All of the activities experienced by the participants in the FOCUS Group were based on the systematic use of the FOCUS behavioral model (Russell, 1992, 1994). Thus, the participants were not only learning the model, they were also experiencing it. This exposure to the FOCUS model was designed to enhance each participant's sense of belonging and acceptance. Since the purpose of this article is to report

on the analysis of the post-treatment efficacy scores of the participants rather than provide the readers of this article with a detailed description of the FOCUS model, we encourage them to refer to Russell (1992, 1994) for a more detailed description of the FOCUS model.

Hypotheses

Even though we believed that the exposure to the FOCUS model would increase the participant's levels of personal and teaching efficacy, we were not willing to assume that those increases would be constant across the pre-treatment levels of efficacy. That is, when compared to the Control Group, the gains in the personal and teaching efficacy scores for the participants in the FOCUS Group may not be consistent across the range of pre-treatment scores. Thus, it was essential to test for the existence of pre-treatment-efficacy-scores-by-group-interaction effects. The null hypotheses that were designed to test for these two-way interaction effects were as follows:

- 1H₀: The interaction effect between the pre-treatment personal teaching efficacy scores and group membership does not explain some of the variation in the post-treatment personal teaching efficacy scores.
- 2H₀: The interaction effect between the pre-treatment teaching efficacy scores and group membership does not explain some of the variation in the post-treatment teaching efficacy scores.

It should be noted that these two null hypotheses did not include the ages and the years of experience of the participants as variables as well as the two-way interaction effects between the groups and each of those variables. These variables were not included due to the fact that, in preliminary analyses, they accounted for less than 3% of unique variation in either of the post-treatment efficacy scores, which was not statistically significant. Thus, those variables were excluded from the two null hypotheses and the corresponding statistical analyses in order to increase the statistical power of the analyses and to simplify the interpretation of the results.

The two null hypotheses were statistically tested with regression models (McNeil, Newman & Kelly, 1996). The SPSS/PC+ subprogram REGRESSION (SPSS, 1990) was used to generate the regression analyses for these two models. The dependent variable for Model 1, which was used to statistically test 1H₀, consisted of the participants' post-treatment personal efficacy scores. This model contained three independent variables. One of the independent variables included in Model 1 consisted of the participants' pre-treatment personal efficacy scores. This variable was labeled Pre-Treatment Personal Efficacy. The second independent variable, which was identified as the Group variables, consisted of the values of zero and one. A value of one indicated that the participant was in the FOCUS Group, and a

zero value meant that the participant was in the Control Group. The third variable included in Model 1 was formed by multiplying the Pre-Treatment Personal Efficacy Scores variable by the Group variable. The inclusion of this variable, which was labeled Pre-Treatment-Personal Efficacy X Group, enabled the difference between the slopes of the regression lines of the Control and FOCUS groups to be estimated.

The teaching efficacy scores served as the dependent variable in the regression model used to statistically test $2H_0$. Similar to Model 1, this model, which is referred to as Model 2, included three independent variables. One of these independent variables consisted of the participants' pre-treatment teaching efficacy scores. This variable was labeled Pre-Treatment Teaching Efficacy. A second independent variable was the same Group variable that was used in Model 1. The third independent variable was generated by multiplying the Pre-Treatment Teaching Efficacy variable by the Group variable. This variable, which was labeled Pre-Treatment Teaching Efficacy X Group, was used to estimate the difference between the slopes of the regression lines for the Control and FOCUS groups.

The t values of the regression coefficients for the Pre-Treatment Personal Efficacy X Group variable and the Pre-treatment Teaching Efficacy X Group variable were used to statistically test $1H_0$ and $2H_0$, respectively. If a null hypothesis was rejected, the Johnson-Neyman (1936) nonsignificance region between the two regression lines was calculated. It should be noted that Chou and Wang (1992) suggest that the Johnson-Neyman technique can be used to make simultaneous inferences provided that the assumption of homogeneity of regression slopes was rejected. The Johnson-Neyman nonsignificance regions were calculated by a program written by Fraas and Newman (1997), which was used in conjunction with SPSS/PC+ software.

Two analytical procedures used in conjunction with the analyses of the regression models should be noted. First, since this study involved the two dependent variables of personal efficacy and teaching efficacy, a Bonferroni corrected alpha level was used to maintain the experimentwise alpha level at the .05 level. That is, the alpha level for each t test used to statistically test each interaction effect was set at .025, which is equal to .05 divided by 2. Second, before each null hypothesis was tested, the data utilized in each model were tested for possible outlier values with a test of Cook's distance measures (Neter, Wasserman and Kutner, 1985). As suggested by Neter et al., the magnitude of Cook's distance measure for each observation was declared an outlier if its corresponding F value exceeded the 50th percentile of the F distribution with numerator and denominator degrees of freedom of 4 and 64, respectively. Any value that appeared to distort the regression analysis was reviewed for possible elimination.

Results

The test results of Cook's distance measures obtained from Model 1 indicated that none of the participants was identified as having scores that could be considered as outlier values. Thus, the data for all 68 participants were included in an analysis of Model 1. The t test of regression coefficient for the Pre-Treatment Personal Efficacy X Group variable ($t = -2.44, p = .0175$) indicated that the difference between the slopes of the regression lines of the FOCUS and Control groups was statistically significant at the .025 level, that is, $1H_0$ was rejected (Table 2). Thus, the differences between the post-treatment personal efficacy scores of the FOCUS and Control groups were not constant across the range of pre-treatment personal efficacy scores.

Table 2
Regression Results for Model 1

Variable ^a	Model 1		
	Regression Coefficient	t Test Value	p Value
Pre-Treatment Personal X Group	-.538	-2.44	.018
Pre-Treatment Personal Efficacy Scores	.852	5.17	<.001
Group ^b	25.124	2.87	.006
Constant	6.362	.97	.338
$R^2 = .370$			
Adjusted $R^2 = .341$			
N = 68			

^aThe dependent variable consisted of the teachers' post-treatment personal efficacy scores.

^bThe values for the Group variable are zero and one for teachers in the Control and FOCUS groups, respectively.

This interaction effect between the Pre-Treatment Personal Scores variable and the Group variable, which is diagramed in Figure 1, was disordinal with the regression lines intersecting at 46.7. The regression line for the FOCUS Group was higher than the regression line for the Control Group below the pre-treatment personal efficacy score of 46.7. The regression line for the Control Group, however, was higher than the regression line for the FOCUS Group for pre-treatment personal efficacy scores higher than 46.7.

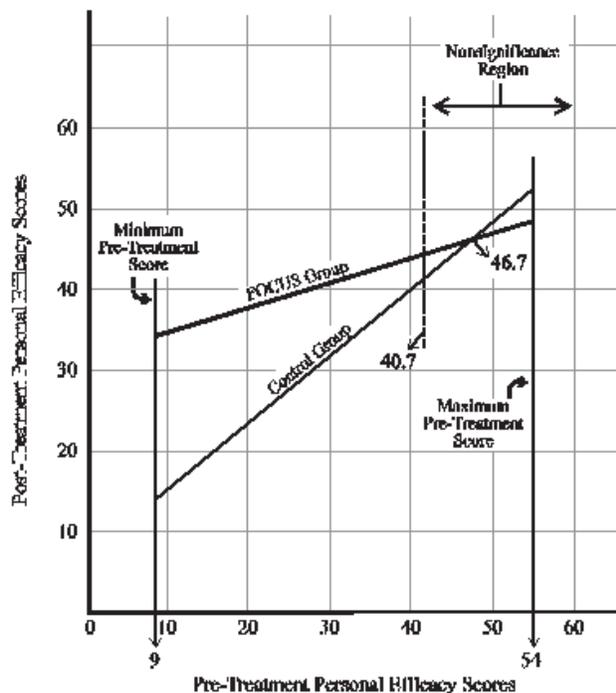


Figure 1. Pre-Treatment-Personal-Efficacy-Scores-By-Group Interaction

The Johnson-Neyman confidence limits were calculated to determine the nonsignificance region between the two regression lines. The upper limit for the 95% confidence limits was 81.8 points, which was above the maximum score of 54 for the personal efficacy section of the instrument. The lower limit was 40.7 points. Thus, the post-treatment personal efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the corresponding scores of the participants in the Control Group when their pre-treatment personal efficacy scores were less than 40.7. The post-treatment personal efficacy scores for the participants in the Focus and Control groups were not statistically significantly different, however, when the regression line for the Control Group was higher than the regression line for the FOCUS Group. That is, the post-treatment personal efficacy scores were not statistically significantly different when the participants' pre-treatment personal efficacy scores were greater than 40.7.

The test results of Cook's distance measures obtained from Model 2 indicated that the data recorded for one participant had a distorting influence on the results obtained

from the regression analysis. A review of this participant's teaching efficacy scores revealed that the scores changed from the minimum score on the pre-treatment measurement to the maximum score on the post-treatment measurement. Since this extreme change far exceed the change recorded for any other participant, this participant's data were eliminated from the data set used to statistically test $2H_0$. Thus, the data for 38 participants, rather than 39 participants, were included in the FOCUS Group when $2H_0$ was tested.

The t test of the coefficient for the re-Treatment-Teaching-Efficacy X Group variable ($t = 2.742, p = .008$) indicated that this interaction effect was statistically significant at the .025 level (see Table 3). As indicated by the two regression lines contained in Figure 2, the interaction effect between the pre-treatment teaching efficacy scores and the groups was disordinal. The pre-treatment score located at the intersection point of the two regression lines was 20.7. The regression line for the Control Group was higher than the regression line for the FOCUS Group below the pre-treatment teaching efficacy score of 20.7 points. The regression line for the FOCUS Group, however, was higher than the regression line for the Control Group for pre-treatment teaching efficacy scores greater than 20.7.

The lower limit of the 95% Johnson-Neyman confidence limits for the regression lines diagramed in Figure 2 was equal to 10.0. It should be noted that even though 10.0 points was above the minimum score of 7 points that a participant could receive on this section of the Teacher Efficacy Scale, none of the participants included in this study had a score below 13 points. Thus, none of the participants had a score below the lower limit of the nonsignificance region. The upper confidence limit was equal to 23.8. Thus, the post-treatment teaching efficacy scores of the participants in the FOCUS and Control groups were not statistically significantly different when their pre-treatment teaching efficacy scores were below 23.8 points, except for extremely low pre-treatment scores, which no one in the study group received. The post-treatment teaching efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the corresponding scores of the participants in the Control Group, however, when their pre-treatment teaching efficacy scores were greater than 23.8.

To understand the implications of the nonsignificant regions as well as the significant regions for the two sets of regression lines, it is important to note that the location of the participants' pre-treatment efficacy scores along those regression lines. Twenty-one of the study's 67 (31%) participants who were included in both analyses had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the scores of the participants in the Control Group on both efficacy scales. Twenty-eight (42%) of the participants had pre-term efficacy scores that corresponded to points on the regression lines where the post-term efficacy scores of the participants in the FOCUS Group

Table 3
Regression Results for Model 2

Variable ^a	Model 2		
	Regression Coefficient	t Test Value	p Value
Pre-Treatment Personal X Group	.703	2.742	.008
Pre-Treatment Personal Efficacy Scores	.153	.790	.433
Group ^b	-14.569	-2.339	.023
Constant	19.800	4.331	<.001
$R^2 = .347$			
Adjusted $R^2 = .316$			
N = 67			

^aThe dependent variable consisted of the teachers' post-treatment teaching efficacy scores.

^bThe values for the Group variable are zero and one for teachers in the Control and FOCUS groups, respectively.

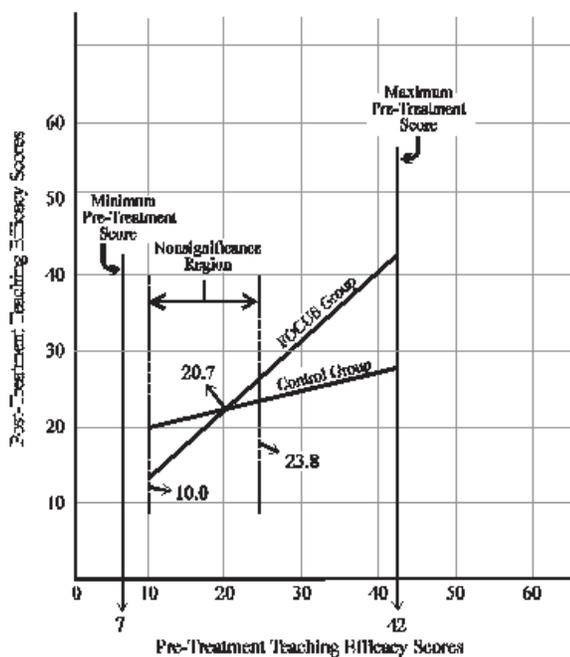


Figure 2. Pre-Treatment-Teaching-Efficacy-Scores-By-Group Interaction

were statistically significantly higher than the scores of the participants in the Control Group on one of the two efficacy scales. The remaining 18 (27%) participants had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the two groups were not statistically significantly different on either efficacy scale.

Thus, a total of 73% had pre-treatment efficacy scores that were located at points on the regression lines where the post-treatment efficacy scores of the participants in

the FOCUS Group were statistically significantly higher than the post-treatment efficacy scores of the participants in the Control Group on at least one of the two efficacy scales. None of the participants had pre-treatment efficacy scores that were located at points on the regression lines where the post-treatment efficacy scores of the participants in the Control Group were statistically significantly higher than the post-treatment efficacy scores of the participants in the FOCUS Group on either of the two efficacy scales.

Discussion

The regression analysis of the participants' post-treatment efficacy scores indicated that disordinal pre-treatment-efficacy-by-group-interaction effects were present. The investigation of these interaction effects was a critical element in the understanding of the effect of the FOCUS model on the efficacy levels of the participants. An analysis of these disordinal interaction effects revealed that a majority of the participants (73%) had pre-treatment efficacy scores that corresponded to levels at which the post-treatment efficacy scores were statistically significantly higher for the FOCUS Group than the Control Group on at least one of the two efficacy measures. The remaining group of participants (27%) had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the two groups were not statistically significantly different on either of the efficacy scales.

Thus, teachers who appear to benefit from exposure to the FOCUS model are those participants with initial personal efficacy levels that are average and below average and those participants with initial teaching efficacy levels that are average or above average. The finding with respect to the personal efficacy levels is not unexpected in light of the purpose of using the FOCUS model and the findings

reported by Bolinger (1988). Bolinger reported that the personal efficacy increased in a training program that provided participants with effective teaching skills. A goal of the FOCUS model is to have the participants, through experiences encountered in the class, become sensitized to the different learning styles of students and to learn various pedagogical methods that will increase the changes of maximizing those students' academic achievements. Thus, exposure to FOCUS may well increase a teacher's pedagogical knowledge and skill level. It can be argued that exposing the teachers to the FOCUS model may well have the greatest impact on those participants who had the lowest initial feelings of being able to affect the education of their students, that is, low personal efficacy levels.

Possible reasons why participants with average and above average initial levels of teaching efficacy recorded the gains in post-term teaching efficacy are not as clear. One possible explanation for that finding may lie in the connection between changes in the participants' personal efficacy levels and their changes in teaching efficacy levels. Investigation into such a connection may provide insight into why the participants with average and above average initial teaching efficacy levels recorded gains in post-treatment teaching efficacy levels when they were exposed to the FOCUS model.

Keeping in mind the internal validity limitations of this field study, which were previously discussed, a number of issues need to be addressed by future research on the FOCUS model and teacher efficacy if one is to have confidence that the FOCUS model does indeed have the positive effects suggested by the results of this study. First, it is important to determine if our findings can be replicated in studies which employ research designs that reduce the number of internal validity concerns contained in this study. Second, future studies need to determine if the type of changes in the personal efficacy and teaching efficacy levels of the participants exposed to the FOCUS model, such as the changes reported in this study, are sustained or only temporary. Third, future studies should determine if the changes in the efficacy levels of the participants exposed to the FOCUS model lead to changes in the academic performances of their students. Fourth, an investigation of the relationship between the changes in personal and teaching efficacy may provide important information regarding the interrelationship between such changes.

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(continued from inside front cover)

As one reviews this history of the College of Education and Allied Professions, it becomes evident that three factors influenced its history. First is the focus. What stands out is the consistency of the mission centered on collaboration with local schools and agencies to prepare teachers for area schools with an urban emphasis. Second, the college has a continuing succession of strong faculty who have provided leadership and vision. Third is success in faculty research and service.

From very humble beginnings, the College of Education and Allied Professions has evolved into a college of over 4,500 students spanning 80 programmatic options at four separate degree levels. It has been recognized for quality of instruction and cutting edge in programming. The faculty, staff and students of the college are proud of their heritage. By all objective criteria the college has never been stronger in terms of quality of its programs, quality of its faculty, quality of its students, support from the university, support from the community, sponsored research, service activities and national reputation.

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The journal is now accepting manuscripts for review and possible publication in 1997 and beyond. Manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

Submit four (4) copies of the manuscript with a cover letter to Deborah L. Bainer (see address in left margin). Manuscripts should conform to the style and format described in the *Publication Manual of the American Psychological Association*, 4th edition. All manuscripts should be typed, double spaced, on 8 1/2 x 11 paper with 1 1/2 inch margins on all sides. An abstract of less than 100 words should accompany the manuscript. The author's name and affiliation should appear on the title page only. Submissions typically are less than 20 pages in length. If the manuscript is accepted for publication, the author(s) will be asked to provide a disk file (WP 5.1 or higher on a 3 1/2 inch high density IBM formatted disk) as well as a printed copy of the final version. Please note that the editors reserve the right to make minor modifications in order to produce a concise and clear article.

Questions regarding the journal or the submission of feature columns should be directed to the editors.

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