

ABSTRACT

DOTGER, BENJAMIN HAYWOOD. Implementation fidelity and facilitator concerns in the process of disseminating a deliberate psychological and professional education innovation. (Under the direction of Dr. Alan J. Reiman and Dr. John L. Nietfeld).

This study examines the dissemination of a deliberate psychological and professional education (DPPE) innovation from its development in a university setting to induction within a rural public school system. The DPPE curriculum innovation was designed to foster cognitive and pedagogical development in educators. Until this study, however, research had not been conducted on the integrity given to the DPPE curriculum when it is transferred from university to school system contexts. Thus, this study addresses the degree of fidelity employed, and the concerns expressed, by public school facilitators as they assume responsibility for implementing the DPPE curriculum innovation. Three quantitative research questions scrutinize the degree of implementation fidelity through an examination of verbal interaction patterns, stages of concern, and core component fidelity. A fourth qualitative research question is employed to ascertain the facilitators' rationale in either maintaining fidelity or introducing changes to the DPPE curriculum innovation. Findings from this study indicate that the DPPE's instructional and curriculum core components were implemented with a high degree of fidelity. Additionally, facilitators indicated peak Stage – 5 Collaboration concerns, indicating focused attention and energy toward coordinated and collaborative facilitation efforts. Verbal interaction patterns differed with regard to direct and indirect facilitator talk, but the percentages of learner engagement and response opportunities were closely aligned with university facilitator standards. Finally, qualitative data indicate significant

attention given to the DPPE teacher participants, with adaptations to the DPPE curriculum innovation centering on their participants' expressed concerns and needs.

IMPLEMENTATION FIDELITY AND FACILITATOR CONCERNS IN THE
PROCESS OF DISSEMINATING A DELIBERATE PSYCHOLOGICAL AND
PROFESSIONAL EDUCATION INNOVATION

by

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DEDICATION

My grandfather was incredibly poor when he attended NC State in the late 1920s. He worked nights and weekends as a butcher, often going without food himself. Every Saturday evening, his boss gave him a cut of meat, ensuring that my grandfather had the energy to study. To this day, my grandfather cries when speaking of the kindness and support others offered him. I do not walk past the bell tower without thinking of him and his words.

A formative chapter in my life is coming to a close. Like my grandfather, I am indebted to many individuals who have guided and supported me along the way. Thus, I humbly dedicate my efforts...

- To my spouse, Sharon, who has been a thoughtful and loving companion since we were kids. To this very moment, I am in awe of you. I look forward to our next adventure!
- To my mother, whose support, grace, and understanding are un-matched.
- To my father, whose wit, patience, and perspectives on life are sought after, admired, and welcomed.
- To my grandfather, Buddy Dotger, whose connection to the earth and family are evident in his hands.

- To my grandfather, Alpheus Stakely, whose thoughts on public education and encouragement of my education endeavors were and continue to be formative.
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- To my sister, who will always be my friend, my backyard football pall, and my driver's education partner.
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- To Michael, Catherine, Madeline, and Megan Maher...friends both young and old who remind me of the true joys and worthwhile goals in life.
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BIOGRAPHY

Ben Dotger was born in 1976 in Kinston, NC to Bill and Sallie Dotger. His early years were spent crouching in the balconies of small country churches, dodging his father's glances from the pulpit. Life on a farm allowed him to explore, instilling in him a constant desire to get and stay dirty and satisfying his curiosity about the larger world around him. Surviving various accidents related to farm equipment, hay bales, and tall trees, he proceeded through grade and high school in Cabarrus County, NC. Formative teachers fostered his interest in the humanities, guiding him through classical literature and historical texts, and instilling in him early a desire to educate others.

Ben attended Elon College in 1994, focusing early on the field of English Education. Study abroad opportunities to London and Belize, coupled with formative teaching practica, confirmed for him his desire to teach. After graduation, he enrolled in graduate school at UNC-Charlotte and began teaching at his alma mater, Mt. Pleasant High School. Close connections with former teachers provided him constructive opportunities to struggle and learn early the rewards and challenges of public education. While working at Mt. Pleasant, he married Sharon Crutchfield, a woman who shared her intellect and companionship since their time together in ninth grade Geometry class. Together, Ben and Sharon grew attached to but restless with the Mt. Pleasant community, thus choosing to return to graduate school at Southeastern University in 2003. Ben remains the humble product of supportive individuals from both past and recent times, as he works to guide and teach others.

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CHAPTER ONE

Introduction of the Problem

James Lancaster, an English sea captain sailing in early 1601, had a simple problem. His crewmembers, like the many that had sailed the seas before them, were susceptible to and dying of scurvy. Consequently, Lancaster initiated a quasi-experimental study on one of his four ships, with three teaspoonfuls of lemon juice serving as his treatment variable. The implementation of Vitamin C proved so effective that Lancaster chose to administer the treatment variable to his three “control” ships as well, staving off their increasing death rates. Additional studies repeatedly documented the beneficial effects of a Vitamin C regimen, but it was not until 1865 that an official policy was put into place by the British Board of Trade, recognizing the citrus innovation and eradicating scurvy’s effect on sailors (Rogers, 1995).

In a similar response to health concerns, a Peruvian public health service center instituted a two-year water boiling campaign in the town of Los Molinas in an effort to combat outbreaks of typhoid. Unfortunately, the indigenous culture associated hot foods with illness. Consequently, only 11 of the 200 families adopted the sanitary process of boiling water before consumption. Although the health agents were native Peruvians, the residents of the town of Los Molinas considered them foreigners. Thus, the social aspects of the dissemination process served as a barrier to the innovative water purification techniques (Rogers, 1995).

The scurvy remedy and hygienic water anecdotes exemplify the difficulties associated with the innovation dissemination process. The term *innovation* originated from the Latin *novus*, or new, and is commonly defined as “...the introduction of

something new...a new idea, method, or device” (Tornatzky & Fleischer, 1990). Guba (1968) suggests that “an innovation is a concept, an attitude, or a tool with accompanying skills...or two or more of these together introduced to an individual, group, institution, or culture that had not functionally incorporated it before” (p. 292). Ryan and Gross (1943) initiated modern research studies on innovation dissemination with their analysis of the diffusion and adoption rates of hybrid corn seeds among the farms surrounding Aimes, Iowa. As noted by Tornatzky, Fleischer, and Guba, these hybrid corn seeds were a new “device” introduced to a farming culture that had yet to incorporate their use (1990; 1968).

The concept of an innovation is associated with the improvement of a certain idea, process, or tool. Thus, the study of innovations is not discipline specific, as the diverse fields of anthropology, economics, public health, and education have yielded and employed innovative research (Downs & Mohr, 1979). While sound research on new innovations is necessary, findings can have no effect unless they are disseminated to individuals with intentions to foster implementation (Guba, 1968). The process of disseminating an innovation from theoretical confines to public use is a common problem for both individuals and organizations (Rogers, 2003). The dissemination of innovations to organizations needing effective social change models is a process involving three complex components: adoption, implementation, and routinization (Mayer & Davidson, 2000). For a variety of reasons, including poor funding and resource allocation, lack of training in dissemination methodologies, and little knowledge of effective dissemination, the aspect of innovation dissemination has been given much less attention and remains a difficult process to study (Bauman, Stein, & Ireys, 1991; Emshoff, 2003).

Historically, the implementation portion of the dissemination process has been viewed as a “black box,” separating the adoption and routinization components. The traditional assumption was that once an innovation was adopted, it entered one side of this implementation “black box” and somehow produced from the other side of the box viable consequences in the form of routinized processes (Fullan & Pomfret, 1977; Goodman, 2000).

Fullan and Pomfret (1977) note “...the assumption appears to have been that the move from the drawing board to the school or classroom was unproblematic, that the innovation would be implemented or used more or less as planned...” (p. 377). Twenty-two years later, Donald Ely extends Fullan and Pomfret’s critique, emphasizing that little effort has been applied to describing and measuring the conditions that exist beyond the point of innovation adoption (1999). The poor assumption of an automatic implementation process is further supported by Fullan (2001) who argues that implementation is not simply an extension of the adoption process, but is instead the complex process of accomplishing the desired objective of the innovation.

In his work, *Capital*, Karl Marx describes the angry, violent reactions of 15th and 16th century Europeans to new innovations. Threatened across the continent by new tools that could increase the amounts of produced textiles and finished woods, townspeople in various locales rioted, killing inventors and sabotaging the new technologies in impressive displays of resistance to innovative change (Fine, 1986). Resistance to change brought forth by innovations is just one facet of the implementation process, but it illustrates the complex nature of innovations. Like the townspeople in Marx’s examples,

“people are much more unpredictable and difficult to deal with than things (innovations)...they are also essential for success” (Fullan, 2001).

Tornatzky and Fleischer extend their basic definition of an innovation to include social factors like those that Marx described, further proposing that a technological innovation is “...the process of getting new tools into a given social environment,” but that these innovations can actually be “the new tools themselves” (1990, p. 10). *Digital Economy*, a recent report by the U.S. Department of Commerce, calls for greater attention to the social context, people, the technology itself, and the action steps taken to foster the innovation. The variables proposed in this report suggest that technological innovations encompass much more than a simple tool (Montes et al., 2003).

Marx’s work and the Department of Commerce’s report emphasize the social implications of innovations. It is important to note that all innovations are surrounded by a social context, but some are influenced to a much greater degree. Such innovations are referred to as social technologies. They are uniquely different from other technological innovations in two ways. First, social technology innovations hinge on replicable procedures. Second, these technologies rely on the behavior patterns of people much more than a reliance on hardware (Tornatzky & Fleischer, 1990). Social technologies, such as the processes of boiling water or emphasizing citrus consumption, do not wager their results on a piece of hardware, but instead are reliant on the replicable procedures and behavior patterns of people.

Replicable procedures and behavior patterns are often points of emphasis in the field of education, as this discipline frequently fosters changes that are technically straightforward but socially complex (Fullan, 2001). The overhead projector is a simple

tool for use in the classroom, but it introduces complex social considerations such as the context in which it is used and the effect on teacher/student communication patterns. If such a basic tool can introduce social ramifications, consider the consequences of introducing computer hardware and software technologies into the scholastic environment. New educational innovations require changes for the adults (teachers, administrators, parents), as well as for the students (Fullan, 2001) and are often viewed as complicated experiences (Fine, 1986).

One type of complex educational innovation is a Deliberate Psychological and Professional Education (DPPE) intervention. Drawing from the cognitive-developmental assumptions that individuals construct meaning through both supportive and challenging, contextually rich experiences, DPPEs serve to assist adult educators in development of both pedagogy and their professional judgments, or dispositions. Initially, DPPE interventions sought to foster teacher cognitive development by beginning with the initial developmental level of the learner and gradually incorporating ‘mismatching’ experiences that stimulated growth. More recent developments in DPPE processes have incorporated seven supportive conditions to aide in the development of teacher skills and dispositions. These seven conditions center on the learner serving in a new role-taking position for an extended length of time. During this time, a more capable other balances disequilibrating and equilibrating experiences and stimuli to challenge the learner’s dispositional development. A guided inquiry process serves as the primary reflective tool as the more capable other leads the adult learner through an assessment and analysis process to help foster the development of pedagogy (Reiman & Johnson, 2003). To date, DPPE interventions have been investigated across the professional development

continuum, including pre-service teacher education, new teacher induction, and on-going professional development.

In a move toward generalization, Guba (1968) emphasizes that “one cannot hope for any considerable improvement in American education unless one also pays a great deal of attention to the process of diffusion” (p. 292). Consequently, those responsible for the dissemination of social innovations have two primary considerations. First, they must address the social innovation itself, insuring that it is effective and ready for dissemination. Second, they must address the social context surrounding the innovation, specifically targeting the culture, values, habits, and concerns of the clientele that will interact and employ the innovation. Fullan and Pomfret (1977) extend Guba’s emphasis, suggesting that positive changes in education require specific attention be given to those individuals who are responsible for the actual implementation of a change. While specific attention has been attributed to the development of the DPPE model’s seven conditions, and while attention has been given in the past to the challenges and promises of the implementation process, these two research strands have yet to be combined. Consequently, there is a compelling need to understand whether DPPE facilitators can effectively implement the social innovation in a manner consistent with its original intent to transform pedagogy and dispositions.

Statement of the Problem

The purpose of this dissertation is to study the implementation of a social education innovation. This inquiry specifically examines the degree of fidelity employed and the concerns expressed by facilitators as they work to implement an education

curriculum based on the deliberate psychological and professional education (DPPE) model. The primary goal of the DPPE curriculum is to transform professional learning and development across the career span of teachers (pre-service teacher education, induction/mentoring, and ongoing professional development). The current focus of the DPPE program is the support of mentor and novice teachers through the deliberate development of pedagogical skills and professional dispositions.

The DPPE curriculum focuses on providing a “comprehensive, research-based, and sustainable mentoring program that provides new teachers the kind of mentoring and school support needed for teachers to remain in the profession and to develop the skills to teach in a competent manner to today’s high standards” (Reiman, 2004). While the curriculum is multi-faceted, it seeks to address one problem. Essentially, U.S. schools are losing novice teachers at alarming rates. Approximately 30% leave within the first five years of practice, and this value increases to 50% for rural and urban school systems (*School and Staffing Report*, 2002). Consequently, one estimate suggests that U.S. schools must recruit between 1.7 and 2.7 million new teachers by 2012 (Gerald & Hussar, 2002). As noted by Odell and Huling, novice teachers must be inducted in ways that foster instructional excellence (Odell & Huling, 2000). Quality induction programs have been shown to be the most cost effective strategies for novice teacher retention and professional development (Arends & Rigazio-DiGilio, 2000). The DPPE model’s seven conditions, on which the DPPE curriculum is closely based, serve as the foundation for the attention given to teacher disposition development, support, and retention.

In an effort to provide teacher development support and to stem issues of teacher retention, the DPPE curriculum was facilitated in a rural school system by Southeastern

University (SU) curriculum developers and Rural School System (RSS) facilitators during the 2003-2004 academic year. The RSS was selected for this initial DPPE instructional effort based on the county's rising poverty rates (29.1%), high unemployment (14.6%) and low adult education levels (49.2% do not have a high school diploma). Most importantly, though, the RSS posts an average loss of 22% of all its teachers, and 60-80% of its lateral-entry teachers, each calendar year. The initial 2003-2004 implementation effort on the part of SU and RSS facilitators was largely successful though, with 100% of the DPPE teacher participants choosing to remain in the teaching profession.

The initial DPPE implementation effort was predominantly facilitated by SU DPPE curriculum developers and facilitators. In compliance with state and federal funding guidelines, the SU facilitators were charged with disseminating the DPPE curriculum to RSS facilitators for the 2004-2005 implementation effort. As a result of this full dissemination, four facilitators became solely responsible for guiding twenty-two RSS mentor and novice teacher participants through the DPPE curriculum during the 2004-2005 academic year. Given the transfer of the DPPE curriculum from SU to the RSS, predominant questions arose. Researchers questioned what would happen to this largely successful, research-based program once it left the confines of the university. More specifically, to what extent would the curriculum efforts of university researchers survive the transfer to a school system context?

The answers to these meta-questions pose significant implications for both educational research and practice. Thus, in an effort to begin addressing these questions, this study scrutinizes the degree of fidelity employed and the concerns expressed by

school system facilitators during a complex dissemination and implementation effort. One of the key issues in a dissemination effort like the one between SU and RSS is the degree of fidelity that is employed by the agents charged with implementing the innovation. The issue of fidelity is often a dichotomous one. There are individuals in support of absolute fidelity who advocate for a pure replication of the original innovation, citing the fact that many innovations have specific and deliberate components that are crucial to the effectiveness of the innovation. Others operate from the “reinvention” or “adaptation” position, arguing that innovations may be modified by on-site program implementers in order to better accommodate the local circumstances of which disseminated programs are a part (Bauman et al., 1991).

While few studies have been conducted in an attempt to assuage this dichotomous debate, there is a tendency towards a median philosophical approach. As Berman and McLaughlin (1978) emphasize, different organizations, settings, and practitioner skills almost always require some amount of innovation program change in order to remain effective (Bauman et al., 1991). Fairweather and Davidson (1986) note that social programs are complex phenomena operating in dynamic ways with surrounding research and implementation environments. Bauman et al. (1991) highlight the complexity of innovations, citing numerous innovation and implementation parameters as they advocate for fidelity with regards to the innovation framework and freedom to adapt and reinvent at the implementation level.

As with any new and complex undertaking, such as the implementation of a social innovation like the DPPE curriculum, disequilibrium and uncertainty are present for those immediately responsible for implementation (Frost & Egri, 1991). Francis Fuller

documented the uncertainty of education professionals through her development of concerns theory in the 1960s. Extensive research led Fuller to propose “clusters” of concerns associated with the developing teacher as he/she begins to undertake the role and responsibilities of teaching (Hall & Hord, 1987). These clusters of concerns (self, task, and impact) occur in a developmental sequence, regardless of the quality or extensiveness of the teacher’s pre-service education program (Hall & Loucks, 1979).

Fuller’s stages of concerns (self, task, impact) established the foundation for Hall & Hord’s *Stages of Concern Questionnaire* (SoCQ). Working to address the progression of the concerns phenomenon in educators, these researchers established an instrument that empirically measures the degree and stage(s) of concern an educator experiences when engaging in a new educational innovation and have documented how innovation concerns change over time in reasonably predictable manners using the SoCQ. Implications for such predictability include the ability to design more effective educational innovations, and specifically their rates of dissemination, that are more sensitive to the potential concerns of future facilitators (Hall & Hord, 1987).

Research Questions and Hypotheses

The initial 2003-2004 DPPE curriculum efforts between SU and RSS resulted in several considerations for the 2004-2005 implementation effort. In conjunction with the full transfer of implementation responsibilities from SU to RSS facilitators, researchers at SU were most interested in the degree of fidelity employed by these facilitators as they worked to implement the DPPE curriculum, independent of university assistance or oversight. Additionally, researchers were also interested in the facilitators’ concerns as

they worked through the disequilibrating implementation process. As a result of the RSS facilitators' new DPPE responsibilities, four research questions and related hypotheses were proposed by SU researchers in order to study this school system implementation effort. The four research questions and related hypotheses for this study are as follows:

1. What is the relationship between interaction patterns at the treatment and comparison group implementation sites, as measured by the Flanders Interaction Analysis System?

- H1 – There is no significant difference between the facilitators' and the comparison group's use of indirect teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H2 – There is no significant difference between the facilitators' and the comparison group's use of direct teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H3 – There is no significant difference between the facilitators' and the comparison group's use of questions in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H4 – There is no significant difference between the facilitators' and the comparison group's percentage of teacher talk/student engagement, as measured by the Flanders Interaction Analysis System.

2. What concerns do facilitators express during the implementation of the DPPE innovation as measured by the *Stages of Concern* Questionnaire?

- H5 – There will be a decrease in the facilitators' *Personal* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H6 – There will be a decrease in the facilitators' *Management* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H7 – There will be an increase in the facilitators' *Consequence* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H8 – There will be an increase in the facilitators' *Collaboration* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H9 – There will be an increase in the facilitators' *Refocusing* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.

3. What is the degree of fidelity employed by facilitators of the DPPE innovation, as self-reported in the DPPE fidelity instrument?

- H10 – The pretest core component mean fidelity score will be higher than the posttest core component mean fidelity score, as measured by the DPPE fidelity instrument.

4. What curricular and pedagogical elements of the DPPE innovation do facilitators identify as needing to maintain or change?

- a. What curricular and pedagogical changes, if any, are described by facilitators in focus group discussions?
- b. What is the facilitators' rationale for maintaining fidelity or introducing adaptations to the DPPE innovation?
- c. What curricular and pedagogical elements, if any, are described by facilitators as needing to be maintained?
- d. What concerns related to the DPPE implementation effort are expressed by the facilitators during focus group discussions?

Significance of the Study

Implementation is the process of putting into practice an innovation's conditions in order to bring about necessary changes. Despite this seemingly pragmatic step in the life cycle of an innovation, there is a general lack of scrutiny regarding what happens to innovations between their development and the time that consequences become evident (Fullan & Pomfret, 1977; Fullan, 2001; Borko, 2004). Instead of concentrating on product development, legislation, or other "on-paper" changes, a study of the implementation process focuses on what implementation agents do and do not do in relation to an innovation (Fullan, 2001). As noted by Goodman (2000), "Implementation assessment is a relevant prerequisite, especially in light of the current emphasis among funding organizations on outcome-based program assessments" (p. 309). A portion of

this emphasis is reflected in the fact that U.S. academic institutions spent an estimated \$36 billion on research and development in 2002. What is not clear, though, is how much funding was granted for the subsequent stage of research dissemination (National Science Board, 2002).

This study contributes to the literature base by providing insight for developers and facilitators of educational innovations as they work to implement new tools and processes designed to develop educators' dispositions and pedagogy. If one can discern from this study which aspects of a DPPE curriculum are implemented with fidelity and which aspects are "reinvented" or abandoned altogether, then future psychological and pedagogical innovations can be structured to accommodate to the contexts of school systems. Additionally, by assessing the disequilibrium of those charged with implementation responsibilities in the RSS, future DPPE development and implementation efforts can deliberately focus on the types of concerns expressed by facilitators new to an innovation. Ultimately, this research offers a new understanding of the implementation processes associated with an innovative model and curriculum specifically designed to transform skills and dispositions of educators.

Limitations of the Study

This investigation is a mixed-method case study of the implementation of a social innovation. As noted by Yin (2003), case studies are subject to construct validity, external validity, and reliability issues. The reliability and validity for the methodologies and the instruments utilized in this study will be discussed in chapter three of the dissertation.

The primary limitation in this study is the sample selection and instrumentation. The sample in this study was not selected through randomized measures, but is instead a purposeful sample selected as a result of its relationship with the DPPE curriculum (Gall, Gall, & Borg, 2003). Additionally, the third research question in this study addresses the degree of fidelity employed by the facilitators of the DPPE curriculum, as measured by a self-report on a program-specific fidelity instrument. Researchers must be cautious when relying on a reported measure of implementation use. While the four RSS facilitators may not deliberately deceive the DPPE developers, their responses on the instrument may only reflect an “attitude of acceptance” (Berman & Pauly, 1975; Crowther, 1972; Fullan & Pomfret, 1977). Also, the use of Wilcoxon Signed Rank Tests in conjunction with a small sample (n=4) indicates that the smallest alpha at which the null hypothesis could be rejected is .06, as indicated by non-parametric tables in Hollander and Wolfe (1999, p. 576-577). Finally, Flanders (1970) does not indicate a level of significance for determining statistically significant differences in verbal interaction patterns. Instead, the researcher relied on the percentile differences used and considered significant by Flanders (1970). Despite these limitations, this study represents the most comprehensive, research-based scrutiny of an education innovation implementation effort. It is the comprehensive nature of the various forms and sources of data that set this scrutiny apart from past efforts.

Terms

The following is a list of key terms and their definitions used in this dissertation:

- *Adaptation* – differing organizational contexts and practitioner needs demand on-

site modifications of disseminated program models (Berman & McLaughlin, 1978).

- *Adoption* – the first stage of the dissemination process, where end-users agree to assume responsibility and employ an innovation.
- *Cognitive Development* – the increasingly complex amendment of schematic structures through the meaning-making process of positive interactions with one’s environment.
- *Concerns* – “...the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task” (Hall, George, & Rutherford, 1998, p. 5).
- *DPPE* – Deliberate Psychological and Professional Education interventions are designed to develop the dispositions, skills, and pedagogy of educators.
- *Degree of Implementation* – the extent to which an innovation is employed with fidelity at the adoption site.
- *Diffusion* – the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995).
- *Direct Teaching Influence* – teacher verbalizations that include giving lectures, giving directions, and criticisms or justifications of authority.
- *Disequilibrium* – the conflict that occurs within one’s cognitive processes as a result of an imbalance between the processes of assimilation and accommodation.
- *Disposition* – an attributed characteristic of a teacher that represents a trend of a

teacher's interpretation, judgments, and actions in ill-structured and progressively more complex professional contexts (Reiman & Johnson, 2003).

- *Dissemination* – the active diffusion of an innovation, consisting of three distinct stages: adoption, implementation, and routinization.
- *End-user* – the person or group who adopts and implements a given innovation.
- *Fidelity* – validated innovative programs are adopted and implemented with close correspondence to the original model (Tornatzky & Dittmar, 1977).
- *Fidelity Instrument* – 58-item instrument based on seven conditions of the DPPE innovation. Facilitators self-report their level of implementation based on a three-tiered scale.
- *Flanders Interaction Analysis System (FIAS)* – a quantitative method for coding the frequency of verbal interactions between a teacher and students.
- *Implementation* – the second stage of the dissemination process, where the components of an innovation are put into practice at the adoption site.
- *Implementation Agent* – a person immediately charged with facilitating the components of an innovation.
- *Indirect Teaching Influence* – teacher verbalizations that include the acceptance of students' feelings, the acceptance and/or use of students' ideas, the use of questions, and encouraging statements.
- *Participant Engagement* – The percentage of participant/student verbalizations during a DPPE class session (as coded by the Flanders Interaction Analysis System).

- *Questioning* – An FIAS category used to classify indirect teacher verbalizations that center on the solicitation of information or opinion from students.
- *Routinization* – the third and final stage of the dissemination process, represented by the institutionalization of an innovation at the adoption site.
- *Rural School System (RSS)* – a pseudonym for the school system under scrutiny in this study of implementation fidelity and facilitator concerns.
- *Social Technologies* – tools characterized more by replicable procedures and behavior patterns than by hardware (Tornatzky & Fleischer, 1990).
- *Stages of Concern Questionnaire (SoCQ)* – Instrument designed to measure the concerns of individuals as they engage with a new program or practice (Horsley & Loucks-Horsley, 1998).
- *Teacher Talk/Student Engagement Ratio* – An FIAS classification that denotes the ratio of indirect and direct teacher verbalizations to student verbalizations.
- *Technologies* – tools or tool systems by which we transform parts of our environment, derived from human knowledge, to be used for human purposes (Tornatzky & Fleischer, 1990).
- *Technological Innovation* – the development, introduction, and dissemination process association with new knowledge-derived tools, artifacts, and devices by which people extend and interact with their environment (Tornatzky & Fleischer, 1990).

Organization of the Dissertation

The second chapter of this dissertation reviews the literature supporting this study of implementation fidelity and facilitator concerns. This review begins with an overview of the elements of a professional development system. These elements serve as the framework for chapters two and five. Chapter two primarily focuses on three areas of literature: Cognitive-developmental theory and DPPE research, Implementation fidelity, and Concerns theory. Cognitive-developmental theory, its applications to the DPPE model, and recent supporting research documenting the viability of the DPPE model are areas of emphasis in Chapter two. Additionally, the issue of implementation fidelity is further scrutinized through recent research documenting the variety of studies and methodologies employed to measure the degree of fidelity employed during this part of the dissemination process. Finally, Concerns theory is discussed in relation to recent research on the assessment of concerns associated with the implementation of social innovations.

Chapter three outlines and explains the methodology for this study. Demographics are reported for the RSS facilitators participating in this study, including their prior knowledge of and activity with the DPPE curriculum in question. Additionally, the instruments used to assess degree of implementation fidelity and facilitator concerns are described in detail. Finally, analysis procedures are outlined for the three quantitative research questions and one qualitative research question.

Chapter four reports the results of this study of implementation fidelity and facilitator concerns. Each research question and the accompanying hypotheses are examined with respect to the report of data from the appropriate instrument.

Chapter five is an extension of chapter four, as it serves as the forum for the analysis and interpretation of the data reported in chapter four. The research questions and accompanying hypotheses are again examined, with a focus on the analysis and interpretation of the reported data and implications for future research.

Summary

Innovation dissemination is a complex progression through the three principle steps of adoption, implementation, and routinization. The implementation process has historically been an assumption on the part of innovation developers, with the successful adoption of an innovation serving as the watermark for innovation achievement. While research on implementation factors has increased in the last twenty-five years, research on the actions of implementation agents is still needed in order to better understand why some educational changes fail to become established (Fullan & Pomfret, 1977; Fullan, 2001; Rogers, 2003). Consequently, this study investigates the actions and decisions of implementation facilitators by addressing the following questions:

- What is the relationship between interaction patterns at the treatment and comparison group implementation sites, as measured by the Flanders Interaction Analysis System?
- What concerns do facilitators express during the implementation of the DPPE innovation, as measured by the *Stages of Concern* Questionnaire?
- What is the degree of fidelity employed by facilitators of the DPPE innovation, as self-reported in the DPPE fidelity instrument?

- What curricular and pedagogical elements of the DPPE innovation do facilitators identify as needing to maintain or change?

Assessing of the degree of fidelity and the facilitators' rationale behind their curricular decisions is critical to discerning which aspects of the DPPE curriculum were implemented as originally intended by the DPPE program developers. By investigating the facilitators' concerns expressed during the implementation process, the development and implementation procedures for future innovations might be shaped to better support implementation agents. The resulting study is a quantitative and qualitative assessment of the degree to which the DPPE curriculum is implemented with fidelity in the context of a public school system.

CHAPTER TWO

Review of Literature

This review seeks to address literature in support of the investigation of fidelity and concerns in the context of the implementation of a deliberate psychological and professional education (DPPE) intervention. In relation to the examination of fidelity and concerns, this review will include an explanation of Francis Fuller's Concern theory and the *Stages of Concern* model, and the Fidelity/Adaptation debate. As the DPPE intervention is the crux of this study, this literature review examines the theoretical framework and evidence-based support of DPPE interventions. In light of the DPPE intervention and the literature bases supporting fidelity and concerns, this chapter is grounded in Hilda Borko's (2004) conceptual framework that focuses on three distinct phases of professional development programs.

In her 2004 presidential address to the American Educational Research Association, Borko examined the inadequacies of professional development programs, emphasizing their often fragmented and superficial nature (2004). In response to this deficiency, Borko emphasized three phases of research on teacher professional development, centering on the relationships between the key elements of a professional development system (See Figure 2.1):

- The professional development program/curriculum;
- The teacher participants/learners in the system;
- The facilitator(s), who guide teacher participants as they construct knowledge and practice;
- The context of the professional development program (Borko, 2004).

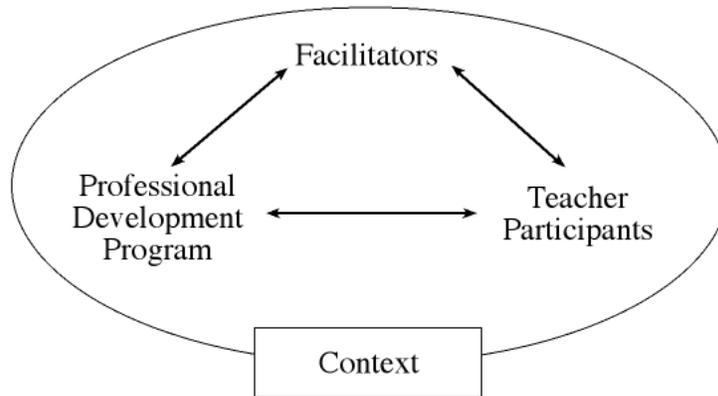


Figure 2.1 – Elements of a Professional Development System

With these four elements in mind, we turn to Borko’s proposed first phase of research on professional development programs. Figure 2.2 represents a focus on the relationships between the facilitator(s), the teacher participants in the program, and one professional development program at a single site. The primary goal of this first phase is to provide evidence that the professional development program has positive effects on the teacher participants. Consequently, much of the research associated with this first phase centers on the relationships between the teacher participants, the professional development program curricula, the facilitator(s), and the development of professional knowledge, skills, and dispositions. Note that the contextual element refers to a research context, thereby emphasizing the initial, researcher-controlled environment and inquiry that are in place.

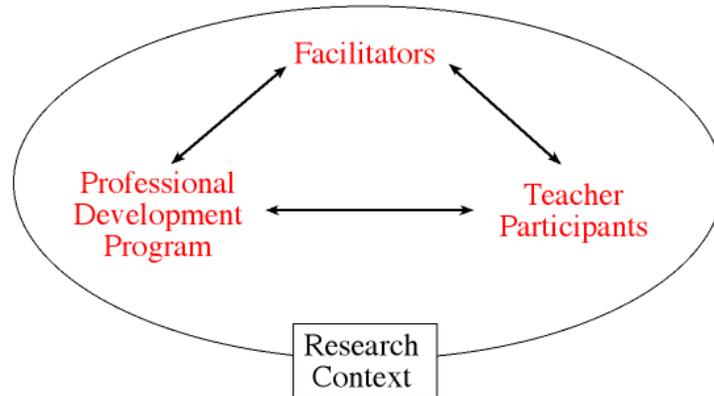


Figure 2.2 – Phase 1 of a Professional Development System

Borko emphasizes that research on professional development programs should start with the program and the affected participants. In light of this emphasis, we turn to the professional development program associated with this study, a Deliberate Psychological and Professional Education (DPPE) innovation, in reference to past research involving the relationship between teacher participants and the DPPE model.

The Deliberate Psychological and Profession Education (DPPE) Innovation

Borko’s model of professional development emphasizes the interplay between facilitators, a professional development program, and teacher participants. In an effort to underscore the interdependency that Borko emphasizes, this section outlines a professional development program, the DPPE model and curriculum, in conjunction with the DPPE facilitators and teacher participants. Specifically, this text examines the theoretical assumptions behind the DPPE model, the domain-specific foci of the DPPE model, the DPPE model’s seven conditions and their curriculum applications, and recent research employing the DPPE model in teacher professional development settings.

Theoretical Assumptions of the DPPE Innovation

The DPPE model seeks to specifically address the construction of knowledge for educators as they undertake complex new professional roles. The acronym “DPPE” represents a deliberate focus on pychological and professional education components. The model assumes that complex new roles result in disequilibrium and epistemic doubt as teachers work to construct meaning from their new environments and responsibilities. The support of teacher facilitators, coupled with the challenges of the new roles and environments, encourages the teachers to begin reasoning with more complex meaning-making systems. This growth in cognition and professional disposition signifies the *psychological* portion of the DPPE model. In addition to a deliberate cognitive concentration, the DPPE curriculum also fosters the development of multiple pedagogical skills through systematic reflective coaching steps. The emphasis on research-based, effective teaching practices, coupled with the continuous employment of the reflective coaching techniques, provides for the *professional education* portion of the DPPE model.

The DPPE model is grounded in the cognitive development traditions (Piaget, 1965; Mead, 1934; Kohlberg, 1969; Hunt, 1974, 1976; & Loevinger, 1976). More recent contributions from Fischer and Pruyne (2002), King and Kitchener (1994), and Rest et al. (1999) address the constructive nature of the meaning-making process. These developmental and constructive approaches to knowledge result in a number of shared assumptions on which the DPPE is built, including (a) the assumption that knowledge/meaning is constructed by individuals through experience, (b) the recognition of cognitive dissonance and the roles of assimilation and accommodation in the equilibration process, (c) an emphasis on cognitive and skill development over time, as

persons' organizing principles, interpretations, and reasoning becomes more complex, integrated, and principled over time, and (d) the recognition that growth is not automatic, but instead occurs as a result of positive interactions within a supportive, yet progressively challenging environment.

Early versions of the DPPE model focused on deliberate psychological education, denoted by a reduced DPE acronym. Initially, DPE conditions for fostering teacher professional development were based on social role-taking (Mead, 1934) and guided reflection approaches (Sprinthall & Thies-Sprinthall, 1983). Mead's focus centers on encouraging persons to examine alternative perspectives through complex social interactions. The guided reflection approach includes the provision of experiences that initially match the developmental level of a learner, gradually incorporating 'mismatching' experiences that stimulate growth to more complex developmental stages through careful analysis, self-assessment, and reflection. On the basis of the aforementioned cognitive-developmental assumptions, the initial developmental stage of the learner determines the amount of structure incorporated into DPE learning experiences, as those at lower developmental stages are provided with highly-structured, unambiguous experiences.

In addition to the focus on psychological development, the DPE model was expanded to include a focus on the professional performances of teacher participants, denoted by the second "P" in the full DPPE acronym (Reiman & Johnson, 2003). Joyce and Showers' (1995) coaching model reflects a deliberate process to fostering the development of professional performances through the incorporation of four coaching tenets. These four tenets include an introduction to relevant theory, demonstration of a

particular skill, guided practice within a controlled setting, and coaching as the skill is adapted to contextual education settings. Fischer's skill theory (1980; 2002) adds to these reflective coaching conditions, suggesting functional and optimal degrees of skill performance, delineated by the presence of supportive contexts. Skills performed at the functional level are done so without the aide of external support systems, while optimal skill performances can only be conducted with presence of guiding, coaching, contextual supports.

Dispositional Domains

The complete DPPE model addresses the development of cognition and professional performances. This development does not occur aridly, but instead centers on the moral/ethical, ego, and conceptual/reflective dispositions of educators. Dispositions are not finite, but instead serve as trends in interpretation, judgment, and action when teachers are confronted with ill-structured problems and increasingly complex professional contexts. These dispositional interpretations, judgments, and actions serve as the bridge between the knowledge and skills of education practitioners (Reiman & Johnson, 2003). As Tatto (1996) notes, most teacher education programs, as they are currently structured, do not *deliberately* change these belief systems of prospective and practicing teachers (Reiman & Johnson, 2003). In contrast, interventions associated with the deliberate psychological and professional education approach are structured to reflect the strengths of the ego development, moral/ethical reasoning, and conceptual/reflective judgment domains.

Erikson (1963) and Loevinger (1976) examined ego development, emphasizing the developmental shift from a focus on self to a focus on others. Gradual development

in this dispositional domain occurs as the teacher participants equilibrate to the new human helping roles. The complex new human helping roles inherently challenge the teacher participants to begin moving beyond themselves, beyond impulsive and self-protective stances, to pedagogical stances that are more conscious of others' needs and differences. Additionally, DPPE curricula encourage the teacher participants to begin recognizing and responding appropriately to the needs and concerns of others by empathically considering their perspectives.

The works of Kohlberg (1969) and the Neo-Kohlbergians (Rest, 1986; Rest et al., 1999) emphasize gradual shifts in moral/ethical development schema. These moral/ethical cognitive structures increase in complexity as a person moves from a focus on his/her own personal interests to a more complex concern for cooperation among individuals and a concern for what is "right" for each individual. The assumption of complex human-helping roles, combined with DPPE curricula that focus on equity for diverse learners, challenge teacher participants to begin shifting toward increasingly complex moral/ethical schema, resulting in gradual positive developments in the moral/ethical disposition.

Hunt (1974, 1976) and King and Kitchener (1994) address various stages of conceptual complexity and reflective judgment, emphasizing the manner in which persons develop increasingly complex views on knowledge and the process of knowing. As the teacher participants gradually equilibrate to their new roles and are subsequently challenged by the DPPE curriculum, they gradually accommodate alternative instructional methods, become more tolerant of instructional and pedagogical ambiguities, and "read and flex" to the developmental needs of students. The curricular

opportunities for continual self-assessments and the inclusion of numerous external sources of evidence help promote positive developmental growth in this domain.

In consideration of the DPPE model's emphasis on psychological and professional performance development in the context of the ego, moral, and reflective dispositional domains, we begin our examination of the seven conditions that constitute the DPPE model. As we begin to focus on these seven DPPE conditions, it is important to note an emphasis on both macro- and micro-developmental variables. Scholars of Piaget's structural theory continue to work to discern the nature of individuality. While Piaget's four-stage theory of development is thought widely applicable to general human development, there remains a discrepancy related to why an individual child might perform better on one set of age-appropriate tasks than on another task set of similar difficulty (Case & Edelstein, 1993). Pascual-Leone (1969) asserted that different forms of disequilibrium, and resulting equilibration, resulted from different types of tasks. Essentially, while development towards greater cognitive complexity was universally applicable to all humans, individual development was sensitive to particular variables and specific contexts (Case & Edelstein, 1993). Methods of measuring developmental change have historically focused on macro-development across time, leaving the micro-developmental steps unexamined (Siegler & Crowley, 1991). Siegler and Crowley underscore a micro-genetic method for scrutinizing these variables and contexts that affect individuals during the process of cognitive change (1991). These small steps towards more complex cognitive development are examined through observations that span the entire time frame of the change process, with specific attention given to the density of observations relative to the given change in behavior. Siegler and Crowley

emphasize the micro-genetic method in relation to developmental changes associated with social contexts, noting that this method of observation “density” has proven particularly effective in investigating the actions of teachers and learners as they work to acquire new competencies and skills (1991).

DPPE Conditions

The DPPE’s seven conditions were designed to promote both macro-developmental and micro-developmental changes across three dispositional domains. As teacher participants engage in complex new professional roles that are supported by the DPPE curriculum, each participant’s individual experiences in education, cultural viewpoint(s), affective and emotional states, past and present pedagogical performances, and ability to reconstruct meaning from disequilibrium serve as specific variables and contexts. Thus, the DPPE conditions and curriculum are designed to situate learning in a social role-taking context, where collaborative activity and inquiry aide individuals in their own micro-developmental growth. Essentially, the seven DPPE conditions are sensitive to individual contexts and competencies, while progressing all participants towards a broader macro-development across the ego, moral, and reflective dispositional domains.

In consideration of the attention given to the theoretical foundations of the DPPE conditions, the macro-developmental dispositional goals, and the micro-developmental focus on individual participants’ competencies and performances, we now turn to an examination of the seven DPPE conditions themselves. A brief description of each of the seven DPPE conditions is provided, followed by implications for professional development and examples of how the DPPE conditions are manifest in the DPPE

curriculum under scrutiny in this study. It is important to note that as each DPPE condition is described, specific references are made to the DPPE curriculum. Following the description of the seven DPPE conditions, the DPPE curriculum is elaborated upon.

Contextualized Learning and Development

Educators of adults must contextualize learning and instruction by accounting for the experiences of diverse learners who are taking on new and expanded professional roles. This element includes acknowledging prior knowledge/experience and developing rapport with the learners (Reiman & Johnson, 2003).

This condition is manifest early in the implementation phase of a professional development program, and serves as a critical first step in the formation of an effective professional development community. In consideration of this condition, facilitators of professional development programs work to build trust within their new community of teacher learners, deliberately constructing opportunities for teacher learners to examine their own prior sources of knowledge and to share these experiences with their colleagues. As a result of this non-evaluative self-examination and disclosure of knowledge and experiences, a sense of trust is gradually fostered within groups of teacher learners and between the program facilitators and the teacher learners.

The first DPPE condition, *Contextualized Learning and Development*, is crucial to the DPPE curriculum in question and is pervasive throughout the entire implementation effort within the RSS. The first DPPE curriculum unit of study, *Building Helping Relationships*, introduces both RSS mentors and beginning teachers to effective communication techniques that include assessing listening skills, recognizing the feelings and concerns of others, and using a conference format designed to foster effective

working relationships. Early in this unit, the teacher participants are introduced to the characteristics of helping relationships, provided with relevant literature on the nature of trust (Tschannen-Moran & Hoy, 2000), and guided by DPPE facilitators through an examination of the needs and feelings of both mentor and beginning teachers. Thus, the foundation for professional rapport and trust among colleagues is established.

New Role-Taking

When teachers undertake complex new human-helping roles such as collaborative action researcher, mentor, or school-based teacher educator, the role-taking (action) precedes and shapes the intellectual consciousness that grows out of it. Guided inquiry, which includes analysis and reflection, grows out of real problems present in immediate experience of the complex new role (Reiman & Johnson, 2003).

The assumption of a complex new human helping role is critical to participants of professional development programs. The new role, and the inherent uncertainty that accompanies the responsibilities of that position, provide teacher learners with a forum for further exploration into their own pedagogical practices and dispositions. As teachers take on new human helping roles they become learners once again, as professional complexities challenge them to re-examine old and accommodate to new educational paradigms from which they operate.

The DPPE curriculum in question centers on supporting novice and mentor teachers that are in complex new human helping roles. The complex new roles of the novice teacher participants are shaped by their new instructional responsibilities, as these novices begin initial explorations into their own content knowledge and pedagogical practices. As the novice teachers work to serve their students, everything is relatively

novel and unique to them. Consequently, the lessons that comprise the *Effective Teaching* unit of study help ground the novices' inherent uncertainties. These lessons and activities focus on research-based, sound pedagogical practices that include attention to carefully designed and focused lesson plans, questioning and management strategies, and tools for continual self assessment.

Similar to the novice teacher participants, the mentor teacher participants associated with this study are also in complex new human helping roles. Their new roles are shaped by the responsibility placed on mentor teachers to guide novice teachers through their early years of teaching. While they are familiar with the responsibilities and demands of classroom instruction, the new role of *mentor teacher* is a fresh and complex challenge. As an example, the *Effective Coaching* unit of study specifically focuses on providing the mentor teacher participants with sound coaching techniques. Lessons that focus on developing coaching plans, demonstration teaching, and conducting formative pre- and post-conferences serve as concrete practices on which the mentor teacher participants can rely as they accommodate to their new roles.

Guided Inquiry

Guided inquiry includes both analysis (intensive written self-assessment using a variety of rubrics) and meta-reflection. Experiential learning can be just as arid as listening to lectures. Carefully planned activities encourage self-assessment of performance, ongoing discussion, and dialogic journaling (reflection). These assessment and reflection activities are guided by a “more capable other” (Reiman & Johnson, 2003).

Effective professional development programs are designed such that the guided inquiry components are pervasive throughout an entire curriculum. The assumption of

complex new roles causes high levels of cognitive dissonance. The guided inquiry process provides teacher learners with the time, context, and support from more knowledgeable colleagues as they begin to address this dissonance. Through discussion, reading, writing, and self-assessments that are tightly linked to school practice and learners, the teachers gradually address the dissonance and uncertainties that accompany their new roles. In addition to the actual inquiry process, there is a deliberate differentiation with regard to the amount of guidance a teacher learner receives from his/her more knowledgeable other. Teachers with greater needs for structure and support are guided with a greater frequency of reflective exchange, more emphasis on concrete examples of practice, and more encouragement during the process of reconciling cognitive dissonance. This inquiry process of self-analysis and reflection, coupled with tailored amounts of guidance from more knowledgeable colleagues, fosters a growth in constructed educational meaning.

The DPPE curriculum in question provides continual opportunities for guided inquiry, as the facilitators of the DPPE curriculum serve as the more knowledgeable guides to the mentor and novice teacher participants. The first unit of study serves as an example of one forum for guided inquiry. This unit promotes the acquisition of positive communication skills, extending these skills to *Getting Acquainted* conferences. These skills and conference format are not simply talked about, though. Instead, the facilitators guide the teacher participants through carefully planned activities designed to encourage them to self-assess their own abilities with regard to listening and the *Getting Acquainted* conference format. These self-assessments are combined with discussion and written reflection in response to the teachers' listening skills and conferencing techniques. As

this analysis and reflection take place, the needs for increased or decreased amounts of structure become apparent through both verbal and narrative transactions. In response, the facilitators work not only to implement the inquiry opportunities, but also to provide differentiated degrees of structure for individual teacher participants as they work through the meaning making process.

Balance

It is important that action (new role-taking) and inquiry remain in balance. Usually this means that the complex new role or helping activity is sequenced with guided inquiry each week. Too great a time lag between action and inquiry or the other way around appears to halt the growth process (Reiman & Johnson, 2003).

Thoughtfully sequenced professional development programs reflect this condition through deliberate attention to the types of activities and their timing during the implementation process. As teacher learners explore their roles, it is critical that they are provided with appropriately timed opportunities to self-assess and reflect in both verbal and narrative formats. Action taken within a classroom, followed by careful assessment and feedback from a more knowledgeable other, allows a teacher learner to continue to take thoughtful action. Essentially, classroom action and guided inquiry work in tandem. If professional development curricula are not designed to foster this partnership, though, then action taken within a classroom is not informed by reflection, resulting in less deliberate pedagogical and disposition growth on the part of the teacher learner. Conversely, if teacher learners are simply called on to reflect on their teaching practices, without actually having regular, concrete teaching episodes to reflect upon, then the inquiry process become sterile and disjointed from classroom contexts.

The DPPE curriculum under scrutiny in this study is designed to foster a balance between classroom action and inquiry. One example centers on the introduction of the Flanders Interaction Analysis System (FIAS) to mentor and novice teacher participants in the second Seminar unit of study. The FIAS is presented to the teacher participants as a tool to aide in the assessment of verbal interactions with their students or colleagues. Once the parameters of the FIAS are outlined for the teacher participants, they are given opportunities to employ the FIAS within classroom contexts. The teacher participants are encouraged to conduct either a lesson or a conference with a colleague. This action is only part of the process, though. The facilitators guide the teacher participants through an initial self-assessment of the lesson or conference, a careful analysis of the actual FIAS data taken from the lesson or conference, and reflection on the congruence or incongruence between their self-assessments and reported data. Without the action taken within classroom contexts, the teacher participants would have no interaction pattern data on which to reflect. Similarly, without the guided inquiry process, the teacher participants would *only* have the FIAS data and would lack the opportunities to self-assess and reflect upon their classroom actions.

Continuity

There is a learning truism that spaced practice is vastly superior to massed practice. The complex goal of fostering both pedagogical learning and dispositional development requires a continuous interplay between action and reflection. A one- or two-week workshop followed by actual helping has not caused shifts in the cognitive structures (development) of the participants. Typically, at least four to six months are needed for significant developmental changes (Reiman & Johnson, 2003).

Professional development programs that honor this DPPE condition are designed to extend the action and inquiry balance across a significant time span. This condition implies a fundamental shift in the characteristic brevity of most professional development programs to include enough time for a constructed shift in teacher cognition. While the consequences of this condition include additional allocations of time and money, this condition also denotes a continuous focus of personnel, as facilitators and teacher learners can not expect to implement or participate in brief, episodic professional development that is effective in changing cognition and developing disposition.

The structure of the DPPE curriculum satisfies the requirements set forth by this condition. Each of the four Seminar units is carefully structured and sequenced to build upon earlier concepts and practices, resulting in a semester-long inquiry into effective teaching and coaching. In addition, the following Practicum curriculum is designed to provide additional opportunities for practice over time and a variety of contexts. These multiple opportunities for action and inquiry, extended over a ten-month period of time, allow for a gradual, yet deliberate progression in pedagogy and disposition.

Support and Challenge

This condition is essentially a rediscovery of Vygotsky's zone of proximal growth (1978). Support and optimal challenge (prompting the learner to accommodate to new learning) are necessary for integrated learning. This is the most complex pedagogical requirement of the DPPE approach. Persons in the complex new roles face new and complex responsibilities, and are often in the middle of a "knowledge perturbation" as they begin the new role. Teacher educators must balance support and encouragement

with progressively more complex intellectual challenges that are just beyond the current preferred ways of problem solving of the novice teacher (Reiman & Johnson, 2003).

The *Support and Challenge* condition has significant implications for teacher professional development. First, it implies that professional development programs are facilitated by individuals who have a firm grasp on the theoretical foundations and practical applications of any given curriculum. This condition also calls upon facilitators to possess an awareness of, and a willingness to act upon, the needs of their teacher learners. In addition to understanding the curriculum and being aware of the needs of teacher learners, the facilitators must also possess the ability to differentiate the amounts of support, structure, and challenge offered to individual learners. This differentiation includes assessing the degree of learners' cognitive equilibration, and a willingness to extend additional challenges to teacher learners in order to continue the growth cycle.

The *Support and Challenge* condition is implemented pervasively throughout the entire DPPE curriculum, as the DPPE facilitators work to continually support the teacher participants during the learning process. This support is needed while the participants work to accommodate to a new skill or concept. Once equilibration has occurred, though, and the participants are comfortable with that given skill, the facilitators work to make them uncomfortable, or disequilibrated, once again. For example, the facilitators introduce the *Getting Acquainted* conference format to the teacher participants early in the first unit of study. Once the participants equilibrate to the challenge of conducting this conference with a colleague in education, the facilitators challenge them again, asking them to adapt the conference format to conducting such a conference with a student's parents/caregivers. With each successive new challenge and eventual

equilibration, gradual shifts in cognitive structures (schemata) begin to occur across the conceptual/reflective, ego, and moral/ethical domains.

Reflective Coaching

Attention is given to fostering new pedagogical skills. Coaching for new performances requires an instructional model, wherein the adult learner, over time, acquires “executive control” of complex new performances. Tenets of reflective coaching include the assessment of prior performance, an overview of related theory and evidence, demonstration, opportunity for guided practice and feedback, and eventual adaptation and generalization of the performance (Reiman & Johnson, 2003).

These *Reflective Coaching* tenets have significant implications for the design of professional development programs. First, thought must be given to the specific performances that the program hopes to develop and how these performances will be initially assessed. Relevant theory and evidence must be gathered and sound demonstrations must be provided for the program’s desired performances. Professional development programs must be structured such that more knowledgeable others have the time to guide teacher learners as they practice new pedagogical skills, including the provision for written and verbal feedback on the part of the more knowledgeable educator. The inclusion of the *Reflective Coaching* condition shapes the professional development program of which it is a part, as the coaching process requires very deliberate efforts that extend beyond the simple transmission of pedagogical or disposition concepts. Instead, the *Reflective Coaching* process requires that professional development programs shed traditionally brief transmission models for more constructivist, process-oriented approaches to learning.

The final condition, *Reflective Coaching*, manifests itself across all of the DPPE curriculum units of study. In the case of the first unit, the facilitators conduct assessments of the teachers' prior experiences with active listening skills. After this initial step, the facilitators review active listening techniques, including examples and evidence of positive and negative uses of these skills. As the teacher participants work through the *Building Helping Relationships* unit, they experience numerous written, verbal, and video demonstrations of active listening techniques, and are provided with several opportunities to practice their active listening and to then place those skills in the context of a *Getting Acquainted* conference format. As the teacher participants practice and become more comfortable with their active listening techniques, the facilitators coach them on appropriate and inappropriate adaptations of the active listening techniques. With time and practice, the teacher participants are able to effectively incorporate these techniques into their daily professional contexts.

The generalization of learned pedagogical skills is critical to both the psychological and professional education aspects of the DPPE model. The *Reflective Coaching* course of action incorporates other DPPE conditions, including the practices of *Guided Inquiry* and *Support and Challenge*. As teacher participants work to improve instructional skills, the *Guided Inquiry* process requires that they self-assess themselves on their own teaching, and take part in ongoing written and narrative dialogue with the DPPE facilitators. As the facilitators guide the participants through this inquiry process, they work to balance supporting the participants with introducing them to progressively more complex pedagogical skills. This process of meeting the teacher learner where he or she is with regard to a pedagogical approach and then gradually introducing

mismatching experiences that offer additional conceptual and pedagogical challenges, embodies the DPPE condition of *Support and Challenge*. If the facilitators successfully coach the teacher participants through the acquisition of effective pedagogical skills, then the accommodation and incorporation of these skills into classroom contexts begins to transform the students' learning as well as well the disposition of the teacher learner.

DPPE Curriculum Overview

The seven DPPE conditions reported above serve as the foundation of the DPPE curriculum. The curriculum was the specific innovation implemented within the RSS, as the four facilitators were responsible for executing the DPPE curriculum within their school system context. Figure 2.3 provides an overview of the DPPE curriculum, denoting the fall Seminar curriculum with its four specific units of study, and the spring Practicum curriculum with delineated units of study for the mentor and novice teacher participants in the RSS.

Deliberate Psychological and Professional Education (DPPE) Curriculum

Seminar (Fall 2004)

Building Helping Relationships	Effective Teaching	Effective Coaching	Adult Development
Listening Assessment	Teaching Competencies Assessments	Coaching Plan Development	Stages of Development
Needs of Beginning Teachers	Lesson Planning	Demonstration Cycles	Case Studies
Getting Acquainted Conference	Positive Reinforcement	Pre-Conference	
Feeling Statements	Questioning Strategies	Observation/Data Collection	
	Classroom Mgmt. and Climate	Post-Conference	
	FIAS	Micro-Cycles	
	Equity for Diverse Learners		

Practicum (Spring 2005)

Novice Teacher Participants	Mentor Teacher Participants
Caregiver Conference	Phases of Concern
Critique of Caregiver Conference	Getting Re-acquainted Conference
Getting Re-acquainted Conference	Guided Reflection
Critiques of Practice Teaching	Problem Solving
	Critiques of Cycle of Assistance

Figure 2.3 – Deliberate Psychological and Professional Education (DPPE) Curriculum

Prior to the beginning of the four Seminar units of study, the mentor and novice teacher participants enrolled in the DPPE curriculum and formed mentor/novice dyads. In recognition of these partnerships, the Seminar units of study were conducted primarily with both the mentor and novice teacher participants, with few delineations according to degree of teacher experience. Differentiation between the mentor and novice teacher participants did occur in the Seminar curriculum, but these differentiated activities still centered on the same concept. For example, at the end of the third unit on *Effective Coaching*, the mentors and beginning teachers split into their respective peer groups. The beginning teachers worked on critiquing various instructional techniques and debriefed on their instructional roles during the reflective coaching process. In contrast, mentor teachers were provided with additional techniques for gathering data on their respective novice's pedagogical skills. The data gathered using these techniques is later used to inform the role of the mentor during the reflective coaching process that occurs with his/her respective novice. While the mentor and novice teacher participants did work through slightly different curricula at times, their efforts still centered on the same reflective coaching process.

After the DPPE conditions were incorporated into the Seminar curriculum, there was a shift from the more knowledge-intensive Seminar course to the more application-intensive Practicum course, where the mentor and novice teacher participants practiced the techniques and skills acquired in the earlier units of study. The Practicum units of study are delineated according to the level of experience of the DPPE teacher participants. The mentor teacher participants' Practicum curriculum is designed to provide concentrated assistance in helping them to further develop their supportive

mentoring techniques. Two DPPE facilitators guide the mentor teacher participants as they focus specifically on guided inquiry techniques and the refinement of their mentoring and reflective coaching skills. Under the guidance of the two additional DPPE facilitators, the novice teacher participants expand their new *Getting Acquainted* conferencing skills to a more specific focus on conferencing with caregivers. The novice teacher participants' Practicum curriculum is specifically designed to assist them in further developing their pedagogical skills, as a significant amount of the Practicum sessions is spent examining and constructively critiquing novice colleagues' teaching episodes.

Evidence of Change

Given the description of the seven DPPE conditions and an overview of the DPPE curriculum implemented within the RSS context, we turn to recent research that supports the viability of all seven conditions in fostering dispositional and pedagogical change. It is important to note that the seven conditions are apparent in the research reviewed below. The interventions, though, differ slightly from the actual curriculum implemented within the RSS, as each successive intervention led to the formation of a complete curriculum for the RSS implementation effort.

Throughout the thirty-year development process of the DPPE model, the viability of the DPPE conditions in transforming teachers' knowledge, skills, and dispositions was tested. In comparison to reviews of implementation fidelity and concerns theory, the number of DPPE-related studies is relatively small. A recent meta-analysis of past DPPE studies (Reiman & Johnson, 2003) was used for the purpose of reviewing research that

employed all seven DPPE conditions. The following review of studies is stratified according to the following conditions:

- the DPPE condition research must have been conducted within the past ten years;
- the DPPE condition research must appear in a peer reviewed publication;
- the research must include all seven DPPE conditions, or be recent meta-analyses that look collectively and retrospectively at either the direct or indirect employment of all seven DPPE conditions.

Reiman (1999) provides a quantitative synthesis of seven studies that focused on fostering cognitive growth in the conceptual and moral/ethical dispositional domains for pre- and in-service teachers. Each study employed the use of the guided reflection process, as more knowledgeable teachers assisted novices through the processes of reflecting on and analyzing their new complex roles as teachers. With the guided reflection process as the independent variable, dependent measurements of moral/ethical and conceptual judgment were taken through the use of the Defining Issues Test (DIT), the Paragraph Completion Test (PCT), or the Sentence Completion Test (SCT). Each of the seven intervention studies lasted between one and two semesters, as they employed DPPE conditions beyond the guided reflection/inquiry process, including the conditions of significant new roles, supportive and challenging environments, balance, continuity, and the inclusion of written reflective dialogue. Results indicated a relatively large effect size of 0.72 for moral/ethical disposition development and a smaller effect size of 0.23 for conceptual development. These results suggest that employing the role-taking and guided reflection approach is effective in promoting the development of moral judgment

and social perspective taking, but less effective at promoting conceptual and interpersonal development aspects that include solving complex problems and interpersonal maturity (Reiman, 1999).

Later, Reiman and Peace (2002) conducted a study related to promoting teachers' moral/ethical and conceptual reasoning through a professional development program centered on a peer coaching process. The seven DPPE conditions were employed as eight expert teachers participated in a seven-month program designed to challenge them as they work to collaboratively plan, demonstrate, and practice new models of teaching with novice teachers through a pre-conference, observation, and post-conference format. In addition to measuring moral/ethical and conceptual complexity through the use of the DIT and PCT respectively, the researchers also measured verbal interaction patterns through the use of the Flanders Interaction Analysis System (FIAS). Additionally, narrative responses by the subjects were coded according to the Stages of Concern (SoC) set forth by Fuller (1969) and Hall & Loucks (1978) (Reiman & Peace, 2002).

In comparison to the control group of five expert teachers, the experimental group showed statistically significant gains in moral judgment, large (but not statistically significant) gains in conceptual complexity, and statistically significant gains in listening skills. Additionally, qualitative analysis of the teacher participants' concerns indicated that as the peer coaching professional development program progressed, the teachers shifted from an initial focus on themselves to a focus on other learners (Reiman & Peace, 2002).

In an effort to measure undergraduate dispositional change over time, Reiman (2004) conducted a study designed to examine longitudinal trends in teacher candidates'

moral reasoning. Two cohorts of pre-service teachers at a large, southeastern university were recruited (total n=73) and assessed using the DIT early in their first semester at the university, with post-testing occurring in the month prior to graduation. The pre-service teachers participated in tutoring experiences which included DPPE-related self-assessments, practice of listening skills, and intensive reflections on their practicum experiences. Additionally, during the third and fourth years of their professional preparation program, the teacher candidates took part in field experiences and professional inquiry designed by the college's teacher education program. Results indicate moderate gains in mean scores of moral reasoning from freshman to senior year for both cohorts, with an average effects size of 0.63. In comparison to national averages in gain scores on longitudinal undergraduate samples, the two DPPE cohorts posted mean gains in moral reasoning that were larger than twenty-one of twenty-two other studies.

Finally, Reiman and Johnson (2003) conducted a meta-analysis of twelve DPPE interventions across the teacher professional career spectrum {pre-service teacher education, induction (first three years of teaching), and ongoing professional development}. Each of the studies was designed to foster positive changes in pedagogical performances and teacher dispositions (moral/ethical judgment, ego judgment, and conceptual/reflective judgment). Experimental and quasi-experimental studies published between 1972 and 2001 or related dissertations were reviewed. The final criteria for selection included the incorporation of the DPPE model, an intervention time frame of at least three months, and the inclusion of dependent measures that assessed teacher judgment (ethical, ego, and conceptual). The use of the DPPE model within the framework for the twelve studies indicates that educators in these studies were

asked to assume complex new human-helping roles, to engage in a scope and sequenced curriculum based on the seven DPPE conditions, and to participate in the guided inquiry process of self-assessment and reflection. Ten DPPE-related studies included an assessment of moral/ethical judgment as a dependent variable, posting a large average effect size of 0.75. Three DPPE-related studies included an assessment of ego judgment as a dependent variable, resulting in a moderate average effect size of 0.59. Nine DPPE-related studies assessed conceptual/reflective judgment as a dependent variable, resulting in a moderate effect size of 0.50. In addition to the assessments of the three dispositional domains, transformations in teacher participants' performances were also assessed. Significant differences ($p < .01$) were found in DPPE participants' listening skills, responses to others' concerns, and the use of inquiry-based questioning.

The studies reported above represent positive trends in methodology and resulting evidence. Reiman and Peace's (2002) study of the development of moral/ethical and conceptual dispositional reasoning introduces the use of the Flanders Interaction Analysis System (FIAS) and the Stages of Concern (SoC) model as methods for collecting data on changes in teachers' pedagogical approaches and their types of concerns that result from interactions with a DPPE intervention. Reiman's (2004) study indicates the applicability of the DPPE conditions to undergraduates, highlighting the comparison of the resulting positive changes in pre-service teacher dispositions with similar national efforts at transforming dispositions. Similarly, two studies (Reiman, 1999; Reiman & Johnson, 2003) serve as meta-analyses for interventions employing the seven DPPE conditions. These synopses not only report moderate-to-large gains in moral, ego, and conceptual dispositions, but also emphasize the use of the seven DPPE conditions in association with

curricula that are implemented over an extended time period, thus allowing for the gradual transformation of teacher disposition and skill through a responsible engagement with both learners and colleagues.

These findings confirm the impact of the DPPE model on positive transformations in teachers' knowledge, skills, and dispositions (Reiman & Johnson, 2003). Research-based and effective DPPE interventions are beginning to take root in university settings, thus challenging ineffective teacher education methods with a more deliberate focus. Despite the presence of DPPE interventions at the university level, there still remain an enormous number of novice and veteran teachers in the public school arena who could benefit from a transformation of disposition and pedagogy. Thus, the question arises of how to best transfer the DPPE model from university to school settings.

The transfer of an innovation from a research-intensive arena to a divergent public school environment serves as the focus of Borko's second phase for professional development programs. While Borko's first phase of professional development programs focuses solely on the research evidence associated with a specific program and its participants, the second phase focuses on the implementation of an evidence-based professional development program at multiple sites. Figure 2.4 demonstrates a research focus beyond the program, facilitator(s), and participants, with a shift in focus that extends to investigating the relationships between program facilitators, teacher participants, and the professional development curriculum as it is implemented within multiple scholastic contexts.

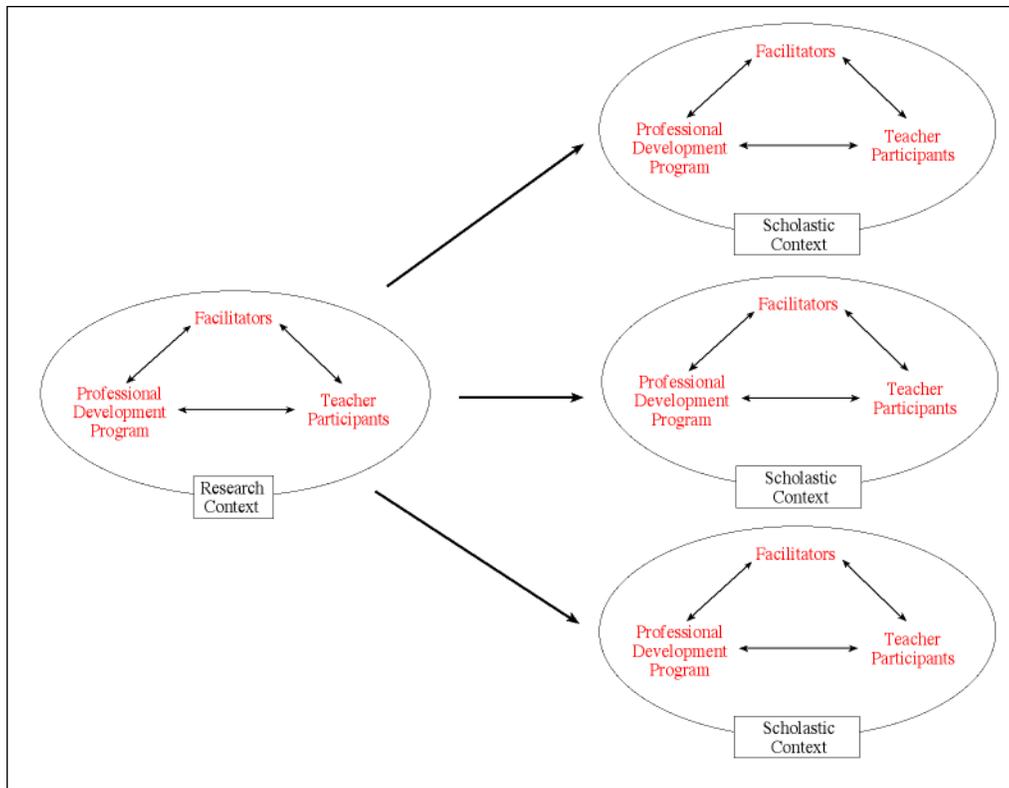


Figure 2.4 – Phase 2 of a Professional Development System

As noted by Borko, one of the central goals and subsequent challenges of this second phase shift to multiple contexts is “...the degree to which a professional development program can be enacted with integrity...” (2004, p. 9). Armed with the knowledge of the seven DPPE conditions, and our knowledge that this second phase of professional development challenges facilitators to implement programs with integrity in arenas outside of a researcher-controlled context, we now shift focus to the fidelity of professional development implementation efforts.

Implementation Fidelity

The Elementary and Secondary Education Act (ESEA) of 1965 is often viewed as one primary catalyst for research on, design, and dissemination of educational

innovations for numerous student populations (e.g. Right-to-Read, Bilingual Education, Handicapped Children's Early Education Program) (Crandall, 1989). To date, the life cycle of an innovation is often associated with this seemingly fail-safe, traditional research, design, and diffusion (RD&D) model (See Figure 2.5). Essentially, this linear model begins and ends with the designer, while implementation agents and the process of implementing an innovation are ignored (Tornatzky & Fleischer, 1990). Of the various strategies for educational change, this model is the most favored, as it is dependent on a planned and specific sequence, a division of labor, passive consumers, and high initial development. The RD&D model hinges on "...the promise that if one can only invent the right packages and then disseminate them in the right way, then change will occur" (House, Kerins, & Steele, 1972, p. 12). Ultimately, though, the RD&D model focuses attention away from the social complexities of educational change, and instead concentrates on the simpler problem of designing a new innovation (House, Kerins, & Stelle, 1972).

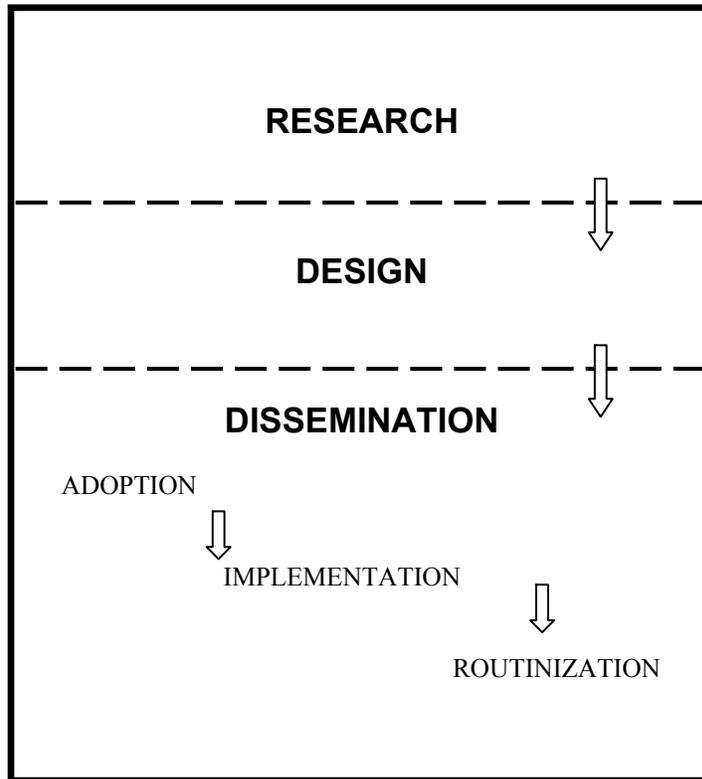


Figure 2.5 – *Traditional Research, Design, and Dissemination (RD&D) Model*

The research and design impetus resulting from the 1965 ESEA act fostered an era of evaluation of newly-adopted and implemented programs in an effort to determine the degree to which these programs were producing outcomes that positively affected students. Innovations with research-documented outcomes were still sight specific, though, leading to the need for a more active and less theoretical approach to disseminating the programs to schools that could not afford to research, design, and produce program curricula themselves. The 1974 creation of the National Diffusion Network (NDN) assisted with the promotion and dissemination of research-validated, government-sponsored programs to school systems across the country. Consequently, two primary research strands emerged. One strand focused on scrutinizing the NDN

dissemination process, while the other strand focused on the innovations themselves. Collectively, both strands drew attention to the varied policies, people, implementation processes, and contexts associated with dissemination efforts (Crandall, 1989).

Early efforts focused primarily on the adoption phase of the dissemination process (Rogers, 2003). Later, as innovations were adopted, the research focus shifted to include aspects of the implementation process, including the landmark RAND corporation study conducted by Berman and McLaughlin (1978). Their four-year study of 293 educational programs set the stage for future implementation studies through the methodologies they employed and the research questions to which they sought answers. After 3,082 interviews with educators associated with implementation processes, their resulting findings emphasized a focus on mutual adaptation. The concept of mutual adaptation suggests a compromise between a professional development program's specific components and the context in which that program is implemented. Essentially, the program's components are altered to fit the new context, while the scholastic context is also amended to accommodate the required components of the professional development program.

Berman and McLaughlin's (1978) study, and particularly the discovery and promotion of the mutual adaptation perspective, delineated another sub-strand of dissemination research. This strand centers on the degree of implementation associated with a given innovation, and is generally framed in the form of a Fidelity/Adaptation debate (Bauman, Stein, & Ireys, 1991), between those who support programmed implementation and those who are in favor of adaptive implementation (Berman, 1980). On one side of this dichotomous debate are those innovation developers and

implementation agents who propose a pro-fidelity approach to the entire implementation process. This approach concerns the degree to which a replicated innovation implemented at an adoption site is similar to the original innovation model set forth by the innovation developers (Mayer, Blakely, & Davidson, 1986). The pro-fidelity approach suggests that faithful program implementation is desirable due to programs' well-specified and research-validated components (Bauman, Stein, & Ireys, 1991; (Blakely et al., 1987). Amending or altering the adopted program risks reducing the effectiveness of the program (Hall & Loucks, 1978; Mayer et al., 1986). Drawing from a sample of 70 social innovations, Blakely et al. determined that programs adopted with high fidelity were more effective than those adapted to site-specific contexts (1987; Bauman et al., 1991).

The rationale of the pro-fidelity approach extends beyond the effectiveness of proven programmatic components. In addition, this approach also amends common implementation problems associated with ambiguity and implementation agents (Berman, 1980). In order to ameliorate ambiguity associated with implementation agents, innovation developers relying on the pro-fidelity approach "...would produce a well-specified, perhaps completely specified plan that has clear and detailed objectives, clean lines of responsibility and limited participation in policy-making, anticipates various contingencies, and requires minimum discretion for all levels of implementers..." (Berman, 1980, p. 210). Essentially, the primary goal of the pro-fidelity approach is to ensure that as the innovation moves from adoption towards routinization, it is "implementation proof" (Berman, 1980, p. 210).

It is the loyal maintenance of program components and the prescriptive nature of innovation goals that give life to the “adaptation” perspective on implementation styles. Proponents of the adaptive perspective suggest that implementation problems arise from rigid, overly-specific goals and the failure to engage implementation agents in the decision-making processes (Berman, 1980). Instead of the prescriptive stance, the pro-adaptation perspective suggests modifying or reinventing the program components to better fit local needs and contexts, thereby increasing the likelihood of program effectiveness. Adaptive implementation allows implementation agents the freedom to adjust policy...so that they can “learn by doing” rather than mechanically follow(ing) a ‘how-to-do-it’ procedure” (Berman, 1980, pp. 211-212). Adaptation supporters suggest that implementation agents and others who are permitted to experiment with and reinvent the program are establishing a sense of ownership in the program (Mayer et al., 1986).

While some argue that the fidelity/adaptation debate is irreconcilable, others suggest a median approach (Hall & Loucks, 1978; Berman, 1980). For example, supporters of the pro-adaptation approach do acknowledge that modifying a program to fit local circumstances can potentially sabotage the core program components or mechanisms that are central to program success, ensuring that effective outcomes are no longer automatic (Bauman et al., 1991; Berman, 1980). Consequently, a median approach to this fidelity/adaptation debate often includes “implement(ing) loosely” in order to match the innovation to the unique features of the setting, while maintaining integrity to the original program model and components (Bauman et al., 1991). Such an approach honors the original program’s core components while offering implementation agents flexibility in adjusting the innovation to local demands. This “feasible fidelity”

position acknowledges that changes must take place in program models if they are to be implemented on a large scale (Bauman et al., 1991, p. 624). Holmes (1997) makes a compelling argument for the meld of the fidelity and adaptation approaches, suggesting that the choice of implementation methodology is an important component of professionalism, distinguishing the thoughtful professional from the process-bound technician. Nurses, legal secretaries, and dental hygienists serve as technicians who must adhere to assignments where there is little difference between one treatment and the next. However, Holmes argues that teachers are afforded a professional choice in methodology as they work to implement a given innovation (1997). Consequently, the professionalism of educators and the unique nature school and classroom contexts "...removes the debate from the level of the ideal – 'Should we permit reinvention?' – to the actual issue: 'How and what is going to change?'" (Bauman et al., 1991, p. 624).

Regardless of one's stance on the fidelity/adaptation debate, there remains the issue of measuring the degree of implementation. For programmed, pro-fidelity implementation efforts, evaluators seek to measure whether or not the prescribed standards are being followed. In contrast, adaptive implementation approaches use evaluation methods to further adaptation (Berman, 1980).

Early reports on measuring implementation include Fullan and Pomfret's (1977) exhaustive examination of various methods, which included an emphasis on the use of item and sub-item scaled instruments (Evans & Scheffler, 1974; Solomon, Ferritor, Heann, & Myers, no date), and records of the use of direct observations, teacher questionnaires, and holistic implementation inventories (Crowther, 1972). Basch's (1984) overview of fidelity measurements documented a variety of methods, including

cursory examinations by program developers, key component measurement, documentation of specific activities, and employment of the Concerns-Based Adoption Model (CBAM). Brekke and Wolkon (1988) suggest daily contact logs as an additional source of data for obtaining measurements of fidelity. While these reviews of fidelity measurement methodologies do highlight various techniques, to date there are no widely-accepted standards or procedures for measuring the fidelity of implementation efforts (Waltz et al., 1993). The documented weakness of fidelity measurements (Brekke & Wolkon, 1988) constitutes a need for validated methods for measuring program implementation (Basch, 1984; Dane & Schneider, 1998).

In light of the early documentation of efforts to measure fidelity, and in consideration of the progression of research methodologies since those efforts, a review of fidelity literature was conducted across the PsychInfo, ERIC, Social Science Citation Index, and Dissertation Abstracts indices using search terms such as *fidelity*, *implementation fidelity*, *treatment integrity*, *fidelity and education*, *fidelity and adaptation*, and *educational innovations*. The results included 627 articles spanning health/clinical trial fidelity, preventative/community health fidelity projects, drug/alcohol prevention programs, and studies of educational innovation fidelity. As a result of the breadth of information, the results were further scrutinized based on their direct applicability to this research study and according to the following conditions:

- The reported literature must be either a specific study, a meta-analysis of fidelity studies, or a review of implementation methodology techniques;
- The research must have been conducted within the past fifteen years;
- the research must appear in a peer reviewed publication;

- Studies must address fidelity in relation to professional development programs in the domains of community psychology or K-12 education.

What follows is a review of selected fidelity research that demonstrates the remaining gaps and positive trends in the efforts to measure implementation fidelity:

Measuring Fidelity

In the context of prevention studies (e.g. violence, drug, alcohol), Dane and Schneider (1998) suggest measuring fidelity across five programmatic dimensions, four of which will be addressed here (adherence, dose, quality of delivery, program differentiation). *Adherence* refers to the decision to follow prescribed, critical elements of a specific program or curriculum. Once critical elements are implemented, though, the *dosage* or the amount of program material received by participants (Dusenbury, Brannigan, Falco, & Hansen, 2003) through either duration or frequency of program sessions becomes another factor worthy of consideration. In addition to adherence and dosage, the *quality of delivery* of program curricula becomes another important factor. Dusenbury et al. (2003) define quality of delivery as “ratings of provider effectiveness which assess the extent to which a provider approaches a theoretical ideal in terms of delivering program content” (p. 244). Finally, Dane and Schneider (1998) suggest a measurement of *program differentiation* as a means of identifying unique and differentiating features of various program components.

Dane and Schneider’s (1998) suggested programmatic dimensions serve as the foundation for our review of measurement methodologies. What follows is a review of applicable studies associated with measuring these dimensions of implementation fidelity:

Resnick et al. (2005) examined four programs associated with behavioral change efforts from the National Institute of Health (NIH), with the intention of the outlining efforts to document treatment fidelity across the four programs. Results of the programs' efforts to document fidelity indicated that adherence, dosage, and quality of program delivery were measured through direct observations on the part of program developers, ongoing training efforts, and indirect observations (via multi-media sources). Additionally, training manuals and component checklists were suggested by the authors as necessary material in order to quantify the degree of fidelity (Resnick et al., 2005).

Boardman and Woodruff (2004) designed a study to measure the degree of implementation of a new instructional practice in relation to a school district that places significant emphasis on state-mandated assessments. Twenty elementary school teachers participated in a professional development program designed to teach and help them implement a new reading comprehension strategy. Interviews were conducted with each teacher at the conclusion of sixteen weeks of implementation efforts; follow-up interviews were conducted six months later to measure the teachers' long-term use of the practice. In addition, the researchers conducted observations, noting on a tiered program-specific checklist which, and to what degree of adherence, components were implemented. These checklists also served to create a holistic quality of implementation measurement for each observed teacher, as the researchers ranked their performance from poor to proficient in the use of the reading comprehension strategy. Finally, participating teachers self-reported on their frequency of implementation (i.e. dosage) and how the various reading comprehension components were used (Boardman & Woodruff, 2004).

Results indicated that 55% of the teachers received a proficient rating in terms of quality of implementation, with lower ratings attributed to the omission of one of more components of the reading comprehension innovation. Interview data indicated that the presence and pressures of standardized tests impacted teachers' decisions of adherence to the program's components and the dosage (i.e. frequency) with which the components were implemented in their classrooms. Finally, teachers reported their rationales for adaptations to the reading comprehension program. These rationales centered on the adaptation or complete omission of certain curriculum components based on the needs of students, and the adaptation of reading comprehension terminology to more closely match the language of standardized tests (Boardman & Woodruff, 2004).

Hansen et al. (1991) conducted a study to measure, in part, the fidelity of four curricula designed to encourage student resistance to social pressures associated with drug and alcohol abuse. A total of 128 classroom teachers were observed across 48 different elementary schools. Trained observers and program specialists sought to measure program integrity, or fidelity, with specific attention given to quality of delivery and the observability of core components. Quality of delivery was measured on a researcher-designed seven-point scale, and included assessments of teachers' enthusiasm, number of actively-involved students, the degree to which instructor delivery met program goals, students' responsiveness, degree of participation, and "overall smoothness of the lesson" (Hansen et al., 1991, p. 572). Measurements of the degree of fidelity to the four programs' core components were conducted using the same scales and rating strategies used in assessing quality of delivery.

Results indicate that the actual implementation of the four curricula was varied across the 128 classroom settings, regardless of the limited range of 3-8 hours of instruction. Despite this observed variability, on the seven-point scale used to measure quality of delivery and fidelity to core components, “most” of the ratings were above the target mean of 4.0, with a standard deviation less than 1.0 (Hansen et al., 1991, p. 575).

Penuel and Means (2003) reported on factors affecting implementation fidelity in regard to an environmental science and science education program entitled GLOBE. GLOBE is an innovation designed to encourage K-12 teachers to incorporate scientific resources and inquiry in their daily instruction. Headed by lead scientists in numerous investigation areas, the GLOBE innovation charges teachers and students to follow lead scientist-specified data collection protocols in their classroom science inquiry. Data collected by students according to the specified protocols is reported to a worldwide database for use in actual scientific studies. As of July 2002, more than 20,000 teachers and 12,000 schools have taken part in GLOBE projects. Penuel and Means (2003) sought to measure the degree of implementation fidelity and adaptation with regard to the specified protocols and the consequential data reported to the GLOBE database. Surveys on barriers to program implementation were sent to 1,500 schools with teachers who had either received recent training in GLOBE protocols or were experienced contributors to the GLOBE database.

Survey results indicated several factors associated with implementation fidelity and adaptation. Barriers to maintaining fidelity to the GLOBE protocols included difficulty integrating GLOBE experiments with school curriculum, finding time to report

the data as required by the protocols, and teachers' judgments of the value in collecting data overriding the process of taking the steps to report it (Penuel & Means, 2003).

Dane and Schneider (1998) conducted the most recent review of studies that recorded program fidelity. Their review targeted studies focused on primary or secondary prevention of behavioral, social, and/or academic maladjustments in children, resulting in a final selection of 162 studies. Of those 162 studies, only 39 reported specific procedures for documenting implementation fidelity. Coding of those 39 fidelity-specific studies revealed four types of program fidelity measurement, including the use of training manuals, lists of session details, facilitator training, and facilitator supervision. Despite the presence of efforts to verify fidelity in those 39 studies, only 11% of the 39 studies focused on measuring adherence to core components, 7% focused on measuring the quality of delivery of program curricula, 6% focused on documenting core component differentiation, and only 13% sought to measure the amount of exposure (dosage) program participants received during sessions (Dane & Schneider, 1998).

In an effort to narrow the gap between research-validated programs and actual classroom practice, the U.S. Department of Education instituted the *Principles of Effectiveness* policy in 1998. The policy requires school districts to first conduct needs assessments, set measurable objectives, choose research-based prevention programs, and evaluate progress towards their determined objectives in order to continue receiving federal funds to combat substance abuse. Hallfors and Godette (2002) conducted a study to determine, in part, the degree to which the selected research-based prevention programs were implemented. A survey was sent to 104 school districts, of which 81 responded. The survey contained tiered-response questions with regard to the influence

of the *Principles of Effectiveness* policy on the adoption of research-validated prevention programs as well as questions on the degree to which these programs were adapted upon actual implementation. Responses associated with the adaptation of research-validated program curricula indicated that 52% of implementation agents (e.g. classroom teachers, school district coordinators/facilitators) had either adapted or combined curriculum materials. Fifty-eight follow-up interviews were conducted, resulting in “few” reports that implementation agents actual engaged “in quality implementation of the programs” (Hallfors & Godette, 2002, p. 466). Quality of implementation problems frequently resulted from lack of teacher training, lack of proper materials, lack of student exposure to the entire program, and a misuse of curriculum with incorrect grade levels. The researchers originally hypothesized that more complex prevention programs would be reinvented, but resulting data indicated that *all* of the programs were “heavily modified” by schools and/or teachers (Hallfors & Godette, 2002).

Dusenbury et al. (2005) conducted a study to test an observational method for measuring quality of implementation. In addition to the frequently measured implementation factors of dosage and adherence to program components, the researchers sought to additionally measure quality of process, valence of adaptation, teachers’ attitudes and teachers’ understanding of concepts. Eleven middle school teachers experienced in teaching a drug abuse prevention program comprised the sample. Each teacher was asked to re-teach one complete session for observation by two researchers. Observation data indicate that teachers implemented an average of 65% of the program’s objectives. Quality of process was observed and scored on a Likert scale, with 82% of the sessions rated as “very interactive” with the teachers delivering curriculum material

with “great enthusiasm” (Dusenbury et al., 2005, p. 310). Each teacher averaged 3.5 adaptations and/or additions to the curriculum, 65% of which the observers judged to be negative alterations to the curriculum. Additional interview data was used in correlation to the observation data. Results indicate that teachers’ understanding of the program was positively correlated to adherence ($r=.784$), teachers with more experience teaching the program were most adherent to the core components ($r=.630$), were more likely to meet program objectives ($r=.590$) and cover major programmatic points ($r=.756$) (Dusenbury et al., 2005).

The above studies were selected as a recent sub-sample that employed various methods for gathering data on the fidelity of implementation efforts across the arenas of substance abuse prevention, community psychology, and K-12 education. Collectively, they represent a series of limitations and recent advances in fidelity research methodology.

The Resnick et al. (2005) study demonstrates the continued use of observations, training manuals, and component checklists in an effort to document fidelity in a manner consistent with very early efforts of measuring fidelity. While Boardman and Woodruff (2004) incorporate some of the traditional methods for measuring fidelity (observations, checklists, interviews), they also worked to specifically measure Dane and Schneider’s recently suggested *dosage* element. Additionally, Boardman and Woodruff incorporate a more affective rating of Dane and Schneider’s *quality of implementation*, with subjective indicators ranging from *poor* to *proficient* (2004). Hansen et al. (1991) also used affective scales to measure degree and quality of implementation, as both elements were measured on a seven-tiered scale that included an assessment of teachers’ enthusiasm,

student responsiveness, and ‘smoothness of the lesson.’ Additionally, Hansen et al.’s measurements of fidelity were based on a limited amount of instruction. Dusenbury et al. (2005) repeated Hansen et al.’s tendency, limiting their data collection to one observation of a program session and rating fidelity on an affective Likert-scale. While the continued use of early fidelity measurement methodologies is not poor practice, the degree to which component checklists, observations, and interview methods are employed to gather data on fidelity still varies widely from one study to the next. Additionally, the employment of these methods also results, at times, in data that is subject to issues of validity, as subjective ratings are difficult to document.

Although the above studies do represent limitations in fidelity measurement, they also represent important strengths. First, Resnick et al. (2005) seek to measure the fidelity of more than one implemented curriculum, extending their research focus to encompass four behavioral change projects. Boardman and Woodruff (2004) documented the fidelity of a program that approaches the time parameters of DPPE interventions, as their program lasted sixteen weeks and included a six month follow-up on implementation efforts. Although Hansen et al.’s (1991) observations were limited in the number of hours, they did extend their sample to include 128 classroom settings across a varied 48 different school contexts. Dane and Schneider (1998) used their large sample (n=162) to illustrate the small percentage of studies that specifically measured adherence, dosage, quality of implementation, and core component differentiation. Finally, Penuel and Means’s (2004) study of the GLOBE innovation across a variety of scholastic contexts provides a critical point of emphasis that extends beyond their large sample (n=1,500). Participating teachers were encouraged to incorporate GLOBE

experiments in their classrooms according to the requirements of their own school curricula, the needs of their students, or their own areas of expertise. The only stipulation, though, was that the teacher(s) and students maintain fidelity to the prescribed GLOBE protocol for collecting data. Consequently, teachers maintain the freedom to select and apply GLOBE experiments to any number of curriculum objectives while still upholding a pro-fidelity approach to the GLOBE data collection requirements.

A variety of methods for measuring implementation fidelity have been employed since the initial emphasis on implementation studies in the 1970s. While observations, interviews, questionnaires and other methods were used intermittently, the primary technique for measuring implementation fidelity has and continues to center on varied forms of fidelity scales (Mayer et al., 1986; Hall & Hord, 1987). The prevalence of fidelity scales (a.k.a. fidelity instruments; core component checklists; innovation configuration checklists) from early studies of fidelity to today's time leads us to more closely examine the background and structure of fidelity scales.

Fidelity scales are innovation-specific instruments designed to evaluate how closely the implemented program resembles the original program model (Paulson et al., 2002). While proponents of program fidelity tout an allegiance to program components, measuring fidelity involves more than simply assessing the number of critical components employed at an implementation site. Instead, the use of fidelity scales involves scaled variations of every program component. Outside evaluators or implementation agents identify the degree (ideal, acceptable, or unacceptable) to which an implemented program at an adoption site mirrors the original disseminated program (Mayer et al., 1986; Blakely, Emshoff, & Roitman, 1984). The *ideal* end of the

continuum reflects an exact implementation of the original program, while the opposite end of the continuum reflects an *unacceptable* degree of implementation. Depending on the number and type of scaled variations listed in the fidelity scale, this type of measurement instrument can provide data on the depth and breadth of implemented program content, skillfulness of intervention techniques, and the frequency of program sessions (Hogue et al., 2005). Figure 2.6 provides three examples of fidelity instrument items, reflecting the tiered *ideal*, *acceptable*, and *unacceptable* variations.

The following scale is used for all components:
I – (Ideal) = 2; A – (Acceptable) = 1; U – (Unacceptable) = 0

Example #1: Component 48, Experience-Based Career Education

48. Career site: Resource person (employer) commitment.

I – Resource people are asked to make specific commitments regarding the specific learning experiences offered at the career site.

A – Resource people are asked to make more general commitments regarding the general kinds of learning experiences offered at the career site.

U – Resource people are not asked to make any commitments regarding the learning experiences offered at the career site.

Example #2: Component 65, Montgomery County Pre-Release Center

65. Teams discuss both new and continuing cases at meetings.

I – At regular team meetings, staff review all current cases and all starts of new cases in depth.

A – At regular team meetings, staff review all starts of new cases, all continuing cases with significant changes, and as many other cases as time allows.

U – At regular team meetings, staff spend little time reviewing current cases with significant changes and focus primarily on new cases.

Example #3: Component 33, DPPE Program

33. Knowledge of Curriculum

I – For each assignment, facilitators provide written feedback that is matched to the needs of the adult learner.

A – For 80% of the assignments, written feedback that is matched to the needs of the adult learner is provided to each participant.

U – Written and verbal feedback are given inconsistently or not at all throughout the assignments and units of study.

*Mayer, Blakely, & Davidson (1986). Social program innovation and dissemination: A study of organizational changes processes. *Policy Studies Review*, 6(2), 273-286.

*Southeastern University College of Education, 2005

Figure 2.6 – Fidelity Item Examples

Akin to fidelity scales, Innovation Configuration (IC) maps were proposed by Hall and Loucks in 1977 after extensive fieldwork demonstrated conflicting reports on the degree of implementation. Essentially, teachers and professors were reporting use of an innovation but their descriptions and employed configurations of the social technologies varied significantly (Hall & George, 2000).

In similar fashion to fidelity scales, IC maps are collections of configurations of core components. As each core component is identified, a number of distinct variations of that component are constructed by the innovation's developer(s) to represent different degrees of implementation. While most fidelity scales center on three degrees of implementation variation (ideal, acceptable, unacceptable), IC maps do not have a set number of variations. Regardless of the number of variations decided upon by the developers of the IC map, they are often displayed in rank from the ideal innovation configuration to other, less desirable variations (Hall & George, 2000). IC maps determine the degree of implementation by allowing an observer to decide upon the configuration of each component that best describes the actions of the implementation agent. In addition to measuring overall implementation, IC maps also serve as diagnostic tools for teacher self analysis, reflection, and school staff professional development needs (Alquist et al., 1999).

The aforementioned historical and current methods for measuring implementation fidelity represent various attempts to capture and validate changes that occur during the dissemination process of an innovation's life cycle. Implementing a professional development program for the first time is inherently challenging, as the program is no longer under the direction of its original developers, and is instead in the care of

potentially inexperienced persons who hope to meld the program with a new context. While fidelity studies focus specifically on the types and degree of changes that occur to program components during the implementation process, the actual process itself is riddled with anxiety-producing events, causing disequilibrium and concern on the part of the implementation agents charged with responsibly guiding an innovation into a new context. Consequently, we now turn to a review of Concerns theory in order to more closely scrutinize the disequilibrium that occurs during the implementation process.

Concerns Theory

Piaget's Theory of Equilibration outlines the process by which individuals make meaning by modifying existing ways of thinking to better accommodate new information. A balanced, equilibrated approach to one's environment suggests that the individual has developed appropriate cognitive structures. A disequilibrated, unsettled, and anxious approach to one's environment, though, suggests that an individual is still in the process of adapting to a new environment or stimuli.

One of the most disequilibrating experiences in the field of education is the student teaching practicum, in which pre-service teachers are challenged to not only assimilate familiar stimuli, but also to amend their pre-conceived notions of teaching and learning based on their new role as a student teacher. In an effort to better understand this disequilibrating experience, Francis Fuller studied the feelings, and perceptions of student teachers in the 1960s, thus forming a theory on concerns. Fuller hypothesized that teachers had different types and degrees of concern based on their experiences. She

proposed a model of concerns outlining the development of teachers' concerns through four levels: unrelated, self, task, and impact (Hall & Hord, 2001).

Unrelated concerns most often occur in persons who have had little or no experience with instructional practices in school settings. Their concerns are not focused on teaching-related issues at all, and instead are centered on aspects of their own current life situations (e.g. non-education courses, personal relationships, etc.). *Self* concerns represent a transition to concerns about aspects of education. Typically, these concerns surface when student teachers begin their clinical experiences (e.g. student teaching). While the concerns are generally related to teaching, they are primarily focused on the teacher and his/her needs. Essentially, the concerns are egocentric, as an individual works to determine how the experience will personally impact him/her. *Task* concerns become evident as the complex practice of teaching is required of teachers. These concerns center on the logistics of pedagogical and instructional practice (e.g. grading papers, lesson planning, obtaining materials, classroom management) and are typically embodied by both novice and experienced teachers. *Impact* concerns serve as the goal for teachers across all levels of experience. This level of concern focuses on how students are affected by the teacher's choices of content and pedagogy. Typical concerns include how students react to particular lessons, student performance on forms of assessment, differentiated instructional techniques, accommodations to unique learners, and increasing teacher knowledge to inform classroom practices.

Fuller proposed that teachers have concerns at several levels, but that the majority of their concerns typically center in one of the four areas. Her findings indicate that two-thirds of pre-service teachers had concerns in the Self and Task areas, while an equal

majority of experienced teachers demonstrated Task and Impact concerns (Hall & Hord, 2001). One significant finding was that teacher education programs seldom addressed the concerns that pre-service candidates were expressing, instead focusing on content and practicum experiences that were misaligned or ill-timed to the nature of the teacher candidates (Hall & Hord, 1987).

Hall, Loucks, George, Rutherford, and others at the University of Texas – Austin sought to extend Fuller’s work on levels of concern. Through additional research, they defined concerns as “the composite representation of the feelings, preoccupation, thought, and consideration given to a certain topic” (Hall, George, & Rutherford, 1986, p. 5). In addition to their expanded view and definition of educators’ concerns, Hall and Loucks (1978) extended Fuller’s work beyond the four levels of concern, proposing a more explicit model of seven stages of concern: *Awareness, Informational, Personal, Management, Consequence, Collaboration, and Refocusing*. The research supporting the construction of these stages documents a developmental path to the stages as the change process unfolds. Under the assumption that the innovation change process is appropriate and facilitated properly, teachers move from the initial Awareness and Self concerns (Awareness, Informational, and Personal stages) to Task concerns (the Management stage), and later to Impact concerns (Consequence, Collaboration, and Refocusing stages) (Hall & Hord, 1987). Regardless of the longevity and experience of the teacher, a new education innovation will cause initial concerns at the Self and Task levels. Veteran teachers, however, are able to more efficiently acknowledge their lower-level concerns, moving quickly to address their Impact concerns that directly influence student learning

(Hall & Hord, 2001). Figure 2.7 provides a detailed description of the each of the seven stages of concern in relation to Fuller's original four-stage model:

AWARENESS

0 – AWARENESS: Little concern about or involvement with the innovation is indicated.

SELF

1 – INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about him/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

2 – PERSONAL: Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making, and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

TASK

3 – MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling and time demands are utmost.

IMPACT

4 – CONSEQUENCE: Attention focuses on impact of the innovation on student in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

5 – COLLABORATION: The focus is on coordination and cooperation with others regarding use of the innovation.

6 – REFOCUSING: The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

Figure 2.7 – Stages of Concern about the Innovation

Educational change often refers to a new program or practice (e.g. cooperative learning, block scheduling). While these *products* of change often receive the most attention, the parallel *process* of change that a person encounters when engaging in a new or different practice is of equal importance (Horsley & Loucks-Horsley, 1998). Hall et al. (1979) developed three instruments to measure the process of classroom change. Collectively, these instruments are referred to as the Concerns Based Adoption Model (CBAM).

One of the three instruments is the Stages of Concern Questionnaire (SoCQ). Although Fuller's initial work was with pre-service teachers, this SoCQ is not specifically connected with the teaching profession, but seeks to empirically assess the stage and degree of concern surrounding any given innovation. The SoCQ has been used extensively across the domains of preventive medicine, community psychology, and education to assess the concerns of individuals charged with adopting and/or implementing a new innovation (Hall & Hord, 2001). For the purposes of this study, a review of concerns-related studies was conducted across the PsychInfo, ERIC, Social Science Citation Index, and Dissertation Abstracts indices using search terms such as *Stages of Concern*, *CBAM*, *Stages of Concern Questionnaire*, *educational change*, and *concerns and change processes*. The resulting 370 studies addressed concerns across a variety of contexts and curricula, including pre-service teachers, technological innovations, management change processes, and numerous science, mathematics, humanities, and preventative health curricula implemented during the past fifteen years. Consequently, this literature review was further stratified according to the following conditions:

- Studies employing either the SoCQ or the SoC model must have been conducted within the past fifteen years;
- the research must appear in a peer reviewed publication;
- studies must employ either the SoCQ or the SoC model to assess concerns associated with the implementation of a new professional development program or education curriculum.

What follows is a review of the studies that met these conditions:

Van den Berg and Ros (1999) propose that the course of an innovation depends on the experiences, concerns, and skills of those individuals charged with the adoption and implementation processes. Consequently, they sought to examine the affective and subjective nature of teachers in relation to three phases of educational innovations (i.e. adoption, implementation, routinization). In a study of teachers' concerns in relation to an innovation termed *adaptive teaching*, 272 Dutch teachers in ten elementary, one secondary, and one vocational school were assessed with a translated and expanded version of the SoCQ. Additionally, outside educational consultants observed and rated the teachers' progress towards adopting and implementing the innovation. A final questionnaire was employed to gain insight into the nature of the teachers' concerns during the three phases of the innovation process, with emphasis on the degree to which they remained concerned about the innovation, their degree of support for the innovation, and the extent to which they thought the goals of the adaptive teaching process had been reached. Results showed a statistically significant decrease ($p < .001$) in teachers' *self* concerns, a moderate decrease in *task* concerns, and a statistically significant increase

($p < .05$) in *impact*, and namely Stage 6- Refocusing, concerns at the completion of the adaptive teaching program (Van den Berg & Ros, 1999).

Bitan-Friedlander, Dreyfus, and Milgrom (2004) conducted a study of the progression of elementary school teachers charged with implementing scientific inquiry skills in their classrooms. Nineteen teachers were led by a mentor teacher through two one-semester training programs. The initial semester was designed to instruct the teachers on the various principles of inquiry, while the following semester was designed to support them as they worked to implement the principles in the classrooms. Data on the teachers' concerns with the scientific inquiry innovation was collected via the SoCQ and individual interviews with the researchers. Significant findings include teachers' reactions to the task of implementing the new curriculum, rather than to the curriculum per se. Specifically, SoCQ and interview data noted an emphasis on the practical concerns of the teachers in relation to the time gap between learning about the innovation and actually working to implement it in their classrooms (Bitan-Friedlander et al., 2004).

In a study with an innovation of similar structure, Dass (2001) reports on the concerns of K-8 teachers as they participate in a year-long professional development program designed to foster science instructional techniques. Data was collected on twenty-four teachers through individual and focus group interviews, workshop and classroom observations, and journals as they participated in summer workshops and fall/spring short courses. The *Stages of Concern* framework was used in the process of data analysis, as interview and document coding followed the patterns delineated by the seven-stage model. Significant findings include Management concerns related to time, resource availability, and student behavior management. Specifically, teacher

participants expressed concern over assessing students, differentiating activities according to these assessments, and the resulting management issues. Finally, teachers expressed Consequence concerns related to the relevance of the instructional strategies for students, and how the innovation relates to student outcomes.

Christou, Eliophotou-Menon, and Philippou (2004) examined teacher concerns and years of experience in relation to the adoption and implementation of a new mathematics curriculum. Using the SoCQ, data was collected from 655 teachers charged with implementing the mathematics curriculum in their classrooms. Results indicated that a majority of teachers expressed Task concerns and fewer Self concerns, to which Christou et al. attribute to the number of years of prior experience the sample of teachers had with similar mathematics innovations. Additionally, the teachers reported fewer Impact concerns, indicating less regard for the consequences of the mathematics curriculum on students' understanding and performance (Christou et al., 2004).

In a mixed-method case study of one school system, Kelly and Straver (2005) examined the concerns associated with implementing an elementary science program. One researcher served as a participant observer, collecting field notes on the implementation efforts of 175 elementary school teachers, while a second researcher conducted interviews with a purposeful sub-sample of 26 of the teachers. Additionally, the SoCQ was employed three times to collect data from the entire sample (n=175) during the three-year implementation effort. Noteworthy results indicate that even after two years, teachers' concerns remained in the early stages (Awareness, Information, Personal, Management) with respect to the implementation of the science curriculum.

Specifically, teachers reported concerns regarding time needed to prepare and implement science activities, content, and vocabulary new to them and their students.

Three recent studies (Bailey & Palsha, 1992; Cheung, Hattie, & Ng, 2001; Ward, West, & Isaak, 2002) have examined the seven-stage model of concerns proposed by Hall, George, and Rutherford (1977), suggesting alternative models. Cheung, Hattie, and Ng (2001) used SoCQ data from a sample of 1,622 teachers to propose a more concise five-stage model (Awareness, Information/Personal, Management, Consequence/Collaboration, and Refocusing). Ward, West, and Isaak (2002) used SoCQ and open-ended questionnaire data from a sample of 110 novice and mentor teachers to propose a modified four-stage model (Awareness, Management, Consequence, and Collaboration). Finally, Bailey and Palsha (1992) used data from a sample of 142 education professionals (teachers, administrators, consultants) to formulate a five-stage model of concerns (Awareness, Personal, Management, Impact, and Collaboration).

The studies noted above highlight significant SoCQ findings, methodological approaches, and curricula structured similar to that of the DPPE intervention in question. The Van den Berg and Ros (1999) study demonstrates the international applicability of the SoCQ with a large sample of teachers ($n=272$). Most importantly, this study reports statistically significant increases ($p<.05$) in the Stage 6 – Refocusing concerns of teachers as they work with a new innovation. The Bitan-Friedlander et al. (2004) study indicates the influence of a two-semester professional development program on the concerns of teachers as they work with a new innovation. Specifically, the teachers expressed concerns about the processes associated with implementing scientific inquiry skills in their classrooms, and not about the scientific inquiry curricula itself.

Similar to the Reiman and Peace (2002) study, Dass (2001) used the SoC model to code individual and focus group interviews and written narrative data. As the twenty-four teachers progressed through the year-long professional development program designed to foster scientific instructional techniques, they issued both verbal and narrative statements that indicated Management and Consequence concerns. Relying solely on the SoCQ, Christou et al. (2004) examined a large sample (n=655) of teachers responsible for implementing a new mathematics curriculum in their classrooms. Noteworthy findings include the presence of significant levels of Task/Management concerns, with low levels of concerns about themselves (Awareness, Information, Personal concerns) and lower levels of concern for their students (Consequence, Collaboration, Refocusing).

Kelly and Straver (2005) employed a variety of methods to assess concerns, including numerous observations, interviews, and the use of the SoCQ on three different occasions. The longitudinal nature of this study is important, particularly in reference to the teachers' continuing Self concerns (Awareness, Information, and Personal) at the two-year mark in the study. Finally, three studies (Bailey & Palsha, 1992; Ward, West, & Isaak, 2002; Cheung, Hattie, & Ng, 2001) have attempted to psychometrically reconfigure the seven-stage Stages of Concern model. Working from a combined sample size that exceeds 1,800 education professionals, these three studies proposed competing four- and five-stage concerns models to more accurately portray the anxieties and concerns of educators working with new innovations. The refined stage models, coupled with the findings from the previously mentioned studies employing the SoC instrument,

influenced the formation of this study's second research question and resulting five hypotheses that examine five individual stages of concern.

Summary

This review of literature provides an examination of the theory and research related to the DPPE innovation, implementation fidelity, and the concerns of individuals working with new innovations.

Borko's second phase of professional development programs emphasizes the issue of integrity as professional development programs are disseminated from research to scholastic contexts. In the dissemination phase of an innovation's life cycle, agents are challenged to either implement an innovation's components with a high degree of fidelity or adapt them to the immediate context and needs of students. Historical and current literature on implementation fidelity suggests a continuing dichotomous debate on the degree to which program components should be altered. Additionally, while fidelity instruments are used in conjunction with other methods for measuring fidelity, few studies actively assess the degree of fidelity associated with implementation efforts.

In the spirit of Borko's first phase of professional development programs, the effectiveness of DPPE-related professional development programs on teacher participants' dispositions has been thoroughly evaluated. To date, though, no study has examined Borko's second phase of professional development programs in relation to the DPPE curriculum. Simply put, the degree of fidelity to DPPE conditions and curricula when they are implemented outside of a researcher-controlled environment has never been evaluated. Consequently, this study's first, third, and fourth research questions and

accompanying hypotheses seek to specifically measure the degree of fidelity associated with the implementation a DPPE curriculum in the context of a rural school system.

The challenges of implementing a new innovation require implementation agents to equilibrate to new curricula, roles, and responsibilities. As they work to address their disequilibrium, various types and degrees of concerns present themselves at various points in the implementation process. In this study, the implementation agents are DPPE facilitators working to implement an innovation designed to cause cognitive dissonance, while also working to process their own cognitive and contextual concerns associated with the implementation process. As a result, this study's second research question and accompanying hypotheses seek to measure the type and degree of concern(s) associated with this process. This assessment of facilitator concerns completes the Professional Development Program – Teacher Participants – Facilitators trio emphasized in both phases of Borko's professional development program sequence.

The upcoming chapter outlines the methods associated with this study of implementation fidelity and concerns. The chapter will describe the specifics of the study, including the sample demographics, research design, data collection instruments, analysis procedures, and limitations of the study.

CHAPTER THREE

Methodology

This study examines a deliberate psychological and professional education (DPPE) innovation, with specific scrutiny given to the degree of implementation fidelity and facilitator concerns. This chapter outlines the research questions and hypotheses, sample demographics, instruments, analysis procedures, and limitations of the study.

Statement of the Problem

The purpose of this study is to examine the implementation of the DPPE curriculum, a year-long social education innovation built on the seven conditions of the DPPE theoretical framework. The primary goal of the DPPE framework and curriculum is to transform professional learning and development across the career span of teachers (pre-service teacher education, induction/mentoring, and ongoing professional development). The current focus of the DPPE curriculum is the support of mentor and novice educators through the deliberate development of professional dispositions and pedagogical skills.

The DPPE curriculum is divided across two semesters of instruction. The initial Seminar curriculum focuses on mentor/novice teacher dyads as they work through four units of instruction. These four units encompass the development of helping relationships between novice and mentor teachers, models of effective teaching, models of effective coaching, and adult cognitive development. Thirteen individual class sessions of approximately three hours in length address the four seminar units.

The accompanying Practicum curriculum fosters the development of the novice/mentor teacher participant relationships and the knowledge of teaching and mentoring assimilated from the previous Seminar curriculum. Specifically, the Practicum curriculum emphasizes the processes of guided reflection, reflective coaching, and peer critiques of teaching and coaching episodes. Six individual class sessions of approximately three hours in length address this further development of pedagogy and dispositional competence.

The entire DPPE curriculum was effectively facilitated in the RSS by four SU curriculum developers and two RSS facilitators during the 2003-2004 academic year. During the 2004-2005 academic year, four RSS facilitators were solely responsible for the implementation of the curriculum. As a result, this study seeks to measure the degree of fidelity employed and concerns expressed by facilitators as the responsibility for curriculum implementation shifts from a university to a school system context.

Methodology Overview

DPPE curriculum developers and facilitators at Southeastern University (SU) relinquished responsibility of the DPPE curriculum innovation to four Rural School System (RSS) facilitators in August 2004. As a result of the full dissemination of the innovation, the original program developers and the reporting researcher could not manipulate the implementation decisions and behaviors of these four facilitators. Consequently, a mixed-methodology approach, with an emphasis on a case study of the four RSS facilitators, was needed to examine the resulting decisions of curriculum fidelity and the concerns exhibited during the implementation process (Yin, 2003).

Embedded within the case study of the RSS implementation process are research questions that are both quantitative and qualitative. As noted by Yin (2003), case studies can be entirely limited to quantitative methods of data collection. While this study is predominantly quantitative, it does involve the collection of qualitative evidence. Based on Creswell's (2003) concurrent nested model, a qualitative question is embedded within this study in an effort to offer a broader perspective on the facilitators' rationale with regard to decisions of fidelity.

One of the traditional prejudices to the case study method is the inclusion of bias in reported findings (Yin, 2003). In an effort to guard against subjectivity, one research question seeks to measure the data associated with the RSS case study in comparison to a group comprised of two SU DPPE facilitators and five mentor teacher participants. This assessment of treatment (RSS) and comparison (SU) DPPE sites is represented in the first research question and hypotheses listed below. The remaining three research questions and related hypotheses are related solely to the case study of the four RSS facilitators.

Research Questions and Hypotheses

1. What is the relationship between interaction patterns at the treatment and comparison group implementation sites, as measured by the Flanders Interaction Analysis System?

- H1 – There is no significant difference between the facilitators' and the comparison group's use of indirect teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

- H2 – There is no significant difference between the facilitators’ and the comparison group’s use of direct teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H3 – There is no significant difference between the facilitators’ and the comparison group’s use of questions in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H4 – There is no significant difference between the facilitators’ and the comparison group’s percentage of teacher talk/student engagement, as measured by the Flanders Interaction Analysis System.

2. What concerns do facilitators express during the implementation of the DPPE innovation, as measured by the *Stages of Concern* Questionnaire?

- H5 – There will be a decrease in the facilitators’ *Personal* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H6 – There will be a decrease in the facilitators’ *Management* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H7 – There will be an increase in the facilitators’ *Consequence* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H8 – There will be an increase in the facilitators’ *Collaboration* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.

- H9 – There will be an increase in the facilitators’ *Refocusing* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.

3. What is the degree of fidelity employed by facilitators of the DPPE innovation, as self-reported in the DPPE fidelity instrument?

- H10 – The pretest core component mean fidelity score will be higher than the posttest core component mean fidelity score, as measured by the DPPE fidelity instrument.

4. What curricular and pedagogical elements of the DPPE innovation do facilitators identify as needing to maintain or change?

- a. What curricular and pedagogical changes, if any, are described by facilitators in focus group discussions?
- b. What is the facilitators’ rationale for maintaining fidelity or introducing adaptations to the DPPE innovation?
- c. What curricular and pedagogical elements, if any, are described by facilitators as needing to be maintained?
- d. What concerns related to the DPPE implementation effort are expressed by the facilitators during focus group discussions?

Sample

The case study portion of this entire study was conducted with a sample of four facilitators from the RSS. In addition to the case study, the first research question compares the verbal interaction patterns of two RSS DPPE facilitators and their mentor teacher participants with the verbal interaction patterns of two SU DPPE facilitators and their group of mentor teacher participants. In recognition of the use of human

participants in this research endeavor and in compliance with Title 45, part 46 of The Code of Federal Regulations, this study was submitted to and approved by the Institutional Review Board at Southeastern University (IRB #199-04-9). What follows is a detailed overview of the participants in this study in reference to all four research questions and accompanying hypotheses:

RSS DPPE Facilitators and Related Research Questions

Four RSS public school employees (Teresa, Wendy, Susan, and Mary) serve as the sample participants for the case study portion of this investigation of fidelity and concerns. All four had prior, but varied experiences with the DPPE framework and curriculum during the 2003-2004 academic year. During that year, Susan and Mary served as classroom teachers for the RSS and were teacher participants in the initial DPPE curriculum primarily facilitated by SU curriculum developers. At that same time, Teresa and Wendy served as co-facilitators of the initial DPPE curriculum in conjunction with SU DPPE curriculum developers/facilitators. In addition, Teresa served as the Director of Instructional Services for the RSS and Wendy served as a RSS Language Arts Curriculum Specialist.

While Teresa and Wendy co-facilitated the 2003-2004 DPPE implementation effort in conjunction with SU representatives, the 2004-2005 DPPE implementation effort required that RSS representatives facilitate the curriculum to a new cohort of RSS novice and mentor teacher participants, independent of SU facilitation assistance. Influenced by their prior roles as teacher participants, Susan and Mary volunteered to serve as DPPE facilitators for the 2004-2005 implementation effort. Having co-facilitated the program once before, Teresa and Wendy agreed to assume responsibility

again as facilitators in the program. Table 3.1 outlines the demographic data of the four RSS facilitators, with a focus on their degrees of education, teaching/administrative experiences in education, years of experiences as DPPE facilitators in contrast to other mentoring efforts, and their current roles within the RSS.

Table 3.1 – RSS DPPE Facilitator Demographic Data

Name	SU/ RSS	Highest Degree Earned	Years Teaching/ Education	Years as DPPE Facilitator/ (Mentoring)	Current Role
Teresa	RSS	Ph.D.	13	1 (10)	Director of Instructional Services/ DPPE Mentor Teacher Facilitator
Wendy	RSS	M.A.	20	1 (5)	Language Arts Curriculum Specialist/DPPE Novice Teacher Facilitator
Susan	RSS	B.A. (M.Ed. in progress)	7	0 (0)	Lead Teacher/DPPE Novice Teacher Facilitator
Mary	RSS	B.A. (M.Ed. in progress)	6	0 (0)	Secondary Teacher/DPPE Mentor Teacher Facilitator

These four facilitators (Teresa, Wendy, Susan, Mary) are crucial to three different research questions in this study. The second research question and accompanying hypotheses are designed to examine the type and degree of concerns expressed by these four facilitators as they work to implement the DPPE framework and curriculum in the RSS. The third research question and accompanying hypothesis are designed to measure the degree of fidelity employed by these four facilitators as they implement the DPPE curriculum. The fourth research question is designed to broadly examine the facilitators' rationale as they make instructional decisions that influence fidelity to the DPPE curriculum.

While this study centers on the four RSS DPPE facilitators, it is important to note that their efforts involve ten novice and eleven mentor teacher participants enrolled in the DPPE Seminar and Practicum courses. Consequently, Tables 3.2 and 3.3 provide basics

demographic information for the DPPE teacher participants, including the license classification for the novice teacher participants.

Table 3.2 – Demographic Data for RSS DPPE Novice Teacher Participants

Name	Race/Gender	Level	School	Classification
Susan	BF	Middle	Hender Middle	Emergency
Jan	BF	Elementary	Pink St.	Lateral
Devin	BF	Middle	Hender Middle	Lateral
Shelly	BF	High	Western RSS	Lateral
Jessie	BF	Elementary	E.R. Rollins	Lateral
Monica	WF	Elementary	E.T. Young	Traditional
Christy	BF	Middle	Hender Middle	Emergency
Karen	WF	Elementary	E.T. Young	Traditional
Brandi	BF	Elementary	Carver	Lateral
Carol	BF	Elementary	Pink St.	Lateral

Table 3.3 – Demographic Data for RSS DPPE Mentor Teacher Participants

Name	Race/Gender	Level	School Name
Gabby	BF	Elementary	Pink St.
Val	BF	Middle	Hender Middle
Trevor	BM	Middle	Hender Middle
Kara	BF	Middle	Hender Middle
Henrietta	WF	Elementary	Carver
Jerry	WM	Elementary	E.R. Rollins
Dori	BF	Elementary	E.T. Young
Elie	WM	High	Western RSS
Susan	WF	Elementary	E.T. Young
Bonnie	BF	Elementary	Pink St.
Devon	WM	High	Northern RSS

A majority of the fall Seminar DPPE sessions address the novice and mentor teacher participants in a combined group. When these two groups diverge according to the requirements of the DPPE curriculum, Wendy and Susan are the DPPE facilitators primarily responsible for the novice teacher participants. In turn, Teresa and Mary work with the mentor teacher participants. The spring Practicum curriculum delineates session objectives according to teaching experience. Thus, the novice and mentor teacher participants are guided entirely by their respective facilitator dyads. From the very beginning of the curriculum implementation process, Wendy and Susan are responsible for evaluating the efforts of the novice teacher participants, while Teresa and Mary work to assess the mentor teacher participants.

RSS/SU DPPE Facilitators and Related Research Question

The sample participants involved with the initial research question extend beyond those associated with the RSS case study. Recall that the second semester of the DPPE curriculum in the RSS is a practicum designed to offer opportunities to practice and reinforce the new skills learned in the previous seminar course. In very similar fashion, a course entitled *Practicum for Supervision* was offered in the fall of 2005 at Southeastern University (SU). This SU course incorporated the same lessons offered by the RSS facilitators to their mentor teacher participants in the spring of 2005, but was conducted by two SU DPPE facilitators with their own small cohort of mentor teacher participants. The following Table 3.4 is similar to Table 3.1, but differs slightly by its additional representation of the two SU DPPE facilitators as a point of comparison to the four RSS DPPE facilitators. Additionally, Table 3.5 provides demographic data for the five SU DPPE mentor teacher participants.

Table 3.4 – RSS and SU DPPE Facilitator Demographic Data

Name	SU/ RSS	Highest Degree Earned	Years Teaching/ Education	Years as DPPE Facilitator/ (Mentoring)	Current Role
Teresa	RSS	Ph.D.	13	1 (10)	Director of Instructional Services/ DPPE Mentor Teacher Facilitator
Wendy	RSS	M.A.	20	1 (5)	Language Arts Curriculum Specialist/DPPE Novice Teacher Facilitator
Susan	RSS	B.A. (M.Ed. in progress)	7	0 (0)	Lead Teacher/DPPE Novice Teacher Facilitator
Mary	RSS	B.A. (M.Ed. in progress)	6	0 (0)	Secondary Teacher/DPPE Mentor Teacher Facilitator
Alex	SU	Ed.D.	30	20	Associate Professor/ Director of Model Clinical Teaching Program
Molly	SU	M.Ed.	13	10 (5)	Clinical Instructor/ Assistant Director of Model Clinical Teaching Program

Table 3.5 – Demographic Data for SU DPPE Mentor Teacher Participants

Name	Race/Gender	Level	School Name
Kendra	WF	Middle	Salem Middle
Lori	WF	High	East Wakefield
Susan	WF	High	Athens Front
Natalie	WF	Elementary	Turner Creek
Margaret	WF	High	Southeast High

In reference to the RSS and SU DPPE facilitators, the first research question in this study seeks to compare the interaction patterns between two of the four RSS DPPE facilitators (Teresa and Mary) and their eleven mentor teacher participants with the interaction patterns of the two SU DPPE facilitators (Alex and Molly) and their five mentor teacher participants enrolled in the *Practicum for Supervision* course at the university. Consequently, two RSS DPPE facilitators, two SU DPPE facilitators, and a combined sixteen mentor teacher participants comprise the sample for the first research question.

Measures

Stages of Concern Questionnaire (SoCQ)

The *Stages of Concern Questionnaire* (SoCQ) is grounded in research on teacher anxieties (Thompson, 1963; Travers, Rabinowitz, & Nemovicher, 1952) and the concerns of student teachers (Fuller, 1969). From this foundation, Hall, Archie, Rutherford and others began to establish procedures for documenting concerns about change expressed by teachers and professors associated with various educational innovations (Hall et al.,

1979). Qualitative data was collected as various innovations were adopted by individuals at the Research and Development Center for Teacher Education at the University of Texas – Austin. With time and successive studies of teachers' concerns, seven stages of concern were identified. These stages represent a logical progression of concerns development as individuals became comfortable using a specific innovation. Essentially, certain types of concerns become more intense and lessen before another type of concern manifests to a dominant degree (Hall et al., 1979).

As the trends in concerns across a variety of innovations became apparent, the SoCQ was developed as a measure of those concerns. The SoCQ is a thirty-five item instrument designed to measure the type(s) and degree(s) of concerns of individuals as they interact with a new educational innovation. Respondents to the questionnaire are prompted by a generic introductory page in which the name of the innovation in question is substituted into a format provided by the designers of the SoCQ. The introductory page addresses the seven-point Likert scale that is provided for each of the thirty-five items in the instrument. Respondents are asked to answer each item in relation to their *present* concerns with the given innovation.

Initially, staff at the Research and Development Center for Teacher Education at the University of Texas – Austin proposed 544 items of potential concern for teachers. As a result of two pilot tests using samples of elementary and college instructors, a final thirty-five item questionnaire was prepared (Hall et al., 1979). Eleven different studies were conducted to determine the validity of the SoCQ. These studies included comparing SoCQ data with expert judge ratings for open-ended concerns statements made by study participants. Conversely, respondents were interviewed regarding their concerns; these

recorded sessions were rated for emerging concerns and compared to the respondents SoCQ data. Subjects were asked to respond to the seven stages of concern by rating themselves on their relative intensity of concerns. Finally, SoCQ data was interpreted in order to make predictions about the possible subject responses in open-ended interviews on concerns. Comparisons were drawn between the predicted concerns and the actual concerns verbally conveyed (Hall et al., 1979).

In order to ensure a high degree of reliability, the thirty-five test items selected for this questionnaire were chosen as a result of their high correlation with other items measuring the same stage of concern. Alpha coefficients were calculated in order to determine the degree of internal consistency between test items. In the initial test to determine internal reliability (n=830), coefficients for the seven stages ranged from .64 to .83, with six of the seven coefficients above .70. After this initial test using the SoCQ, 132 subjects completed the instrument a second time to determine Test-Retest correlations. These Pearson (r) correlations ranged from .65 to .86, with four of the seven correlations above .80 (Hall et al., 1979).

The thirty-five items that comprise the SoCQ are divided evenly across the seven stages of concern, resulting in a five-item raw score. SoCQ data can be reported in several variations that differ in complexity. The most often reported data reflect the peak stage concerns and secondary stage concerns scores of individual respondents; this data reflects SoCQ raw scores that have been converted to a percentile scale. More complex analysis may be conducted to illustrate either individual or group concerns profiles across all seven stages of concerns (Hall et al., 1979). This analysis is conducted using the initial SoCQ raw scores.

DPPE Fidelity Instrument

The DPPE fidelity instrument is an innovation-specific instrument, and therefore can only assess the degree of implementation fidelity for interventions employing the seven DPPE conditions and curriculum core components. It is not designed to assess the degree of implementation for educational innovations that extend beyond the DPPE model. As a result of the inability of other fidelity instruments to accurately measure fidelity to DPPE curricula, the DPPE fidelity instrument was designed by one of the original DPPE framework and curriculum developers at SU in conjunction with the reporting researcher during the summer of 2004.

This instrument outlines the eight core components associated with the DPPE Seminar and Practicum courses offered in the RSS starting in August of the 2004-2005 academic year. It is important to note that these components embody both the DPPE conditions and tenets of the DPPE curriculum. The DPPE fidelity instrument core components are as follows:

- Participants and Program Structure
- Administrative Support
- Facilitator Dispositions
- Knowledge of Curriculum
- Skill with Instruction
- Knowledge of Supporting Theory/Research
- Attention to Building Relationships
- Knowledge of Technology

Associated with each of the eight core components are between four and eleven items, resulting in a fidelity instrument of fifty-eight total items. Each item is a prompt with three potential answers, labeled as *Ideal*, *Acceptable*, and *Unacceptable*. The following is an example of the format for each item in the instrument:

I = Facilitator expresses a “high degree” of comfort with the coaching competencies checklist.

A = Facilitator expresses a “moderate degree” of comfort with the coaching competencies checklist.

U = Facilitator expresses discomfort or no knowledge of the coaching competencies checklist.

The pre-implementation assessment given in early August 2004 instructed the RSS DPPE facilitators to rate themselves on each item according to their *intended* degree of implementation fidelity. The post-implementation assessment given in late May 2005 instructed the facilitators to rates themselves on each item according to their *actual* degree of implementation fidelity employed during the past two DPPE program semesters. This difference between *intended* and *actual* degrees of implementation was deliberately assessed to measure the facilitators’ intentions prior to the implementation process in comparison to the components they were actually able to put into practice during the implementation process.

Construct validity was established through the process of interviewing DPPE program developers and former facilitators (Gall et al., 2003). The consequential development of the DPPE fidelity instrument began with these three independent, semi-structured interviews. Each individual was asked to verbally convey his/her perceptions of the core components of the DPPE curriculum (Gall et al., 2003). As a list of core components was constructed in each interview session, the reporting researcher directed the respondent back to each component. For each cited core program component, the respondent was asked to verbally construct a list of the theoretical, instructional, reflective, and evaluative elements.

Interview notes and transcripts were used to construct an initial draft of the DPPE fidelity instrument. The specific format for this instrument, involving a three-tiered *Ideal, Acceptable, and Unacceptable* level of response, was drawn from multiple studies of implementation fidelity (Bauman et al., 1991; Berman, 1980; Blakely et al., 1984; Blakely et al., 1987; Gray, Emshoff, Jakes, & Blakely, 2000; Gray, Jakes, Emshoff, & Blakely, 2003; Hogue et al., 2005; Mayer et al., 1986; Paulson et al., 2002). A completed draft of the fifty-eight item DPPE fidelity instrument was submitted to an original DPPE curriculum developer and former facilitators for review and pilot testing. Revisions to fidelity instrument items were made in conjunction with the responses from these individuals (Crowther, 1972). (See Appendix F for the DPPE fidelity instrument).

Flanders Interaction Analysis System

The Flanders Interaction Analysis System (FIAS) is an assessment tool that allows an educator to closely analyze his/her interactions with students in a classroom context. Interaction analysis involves the systematic coding of class session verbalizations on a designated observation form. In an education environment, this interaction analysis includes coding on average every three seconds the spontaneous verbal communications that occur in a classroom, and analyzing the data in order to study patterns of teaching and learning. The process of analyzing interactions allows the educator to identify patterns of teaching and then work towards a plan of self-development of these behaviors (Flanders, 1970).

Ned Flanders and others at the University of Minnesota developed the ten-category FIAS. Seven of these categories are used to code types of teacher

verbalizations, two are used to code pupil verbalizations, and the final category captures silence or confusion that occurs during the classroom observation (Flanders, 1970). The following table summarizes the ten-category FIAS:

Table 3.6 – Flanders Interaction Analysis System (FIAS) Categories

	SUMMARY OF CATEGORIES FOR INTERACTION ANALYSIS
INDIRECT TEACHER INFLUENCE	<ol style="list-style-type: none"> 1. ACCEPTS FEELINGS: Acceptance or acknowledgement of student-expressed emotions (feelings) in a nonthreatening manner. 2. PRAISES OR ENCOURAGES: Positive evaluation of student contributions. 3. ACCEPTS OR USES IDEAS OF STUDENT: Clarification, development, or reference to student contributions. Usually nonevaluative. 4. ASKS QUESTIONS: Solicitation of information or opinion with the intent that a student answer.
DIRECT TEACHER INFLUENCE	<ol style="list-style-type: none"> 5. LECTURES: Presentation of information, opinion, or orientation; includes rhetorical question. 6. GIVES DIRECTIONS: Direction or suggestion with which a student is expected to comply. 7. CRITICIZES OR JUSTIFIES AUTHORITY: Negative evaluation of student contributions. Self-reference to teacher's authoritative position.
STUDENT TALK	<ol style="list-style-type: none"> 8. STUDENT TALK-RESPONSE: Contribution in response to teacher. Usually results in a predictable answer. 9. STUDENT TALK-INITIATION: Student-initiated contribution or a response that is unpredictable or originally creative in content.
	<ol style="list-style-type: none"> 10. SILENCE OR CONFUSION: Periods of silence or inaudible verbalization lasting more than three seconds.

From Flanders, N.A. (1970). Analyzing Teaching Behavior. Reading, MA: Addison-Wesley.

The FIAS categories document the percentages of initiated and response talk on the part of the teacher and students. Teacher initiated talk is represented by categories 5-

7, with teacher response talk represented by categories 1-4. In addition to providing data on the percentages of indirect and direct teacher verbalizations, the FIAS also measures the percentage of learner engagement by comparing the frequency of student verbalizations with that of the combined direct and indirect teacher verbalizations. Student response talk is coded in category eight and student initiated talk is coded in category nine.

The first research question and accompanying hypotheses call for a comparison of the interaction patterns between the facilitators and teacher participants at the RSS implementation site and the SU comparison site. The verbalizations between Mary, Teresa, and their eleven mentor participants in the RSS were compared with the verbalizations between Alex, Molly, and their five mentor participants at SU. The second and fourth DPPE Practicum sessions at each site were recorded and transcribed to allow two independent raters to code the percentages of indirect verbalizations, the number of questions asked in each session, the percentage of direct verbalizations, and the percentage of student (teacher participant) verbalizations.

Qualitative Measures

Focus group interviews with the four RSS facilitators took place at the mid-point and end of the DPPE implementation effort (November 2004 and May 2005). The purpose of these interviews was to provide the facilitators with opportunities to discuss the rationale behind their decisions to either implement with fidelity or adapt the DPPE curriculum. As noted by Bogdan and Biklen (2003), the focus group format is effective for obtaining responses to “institutional interventions” and also for “foster(ing) talk

among the participants for particular issues” (p. 101). Gibbs (1997) emphasizes the use of the focus group format specifically for obtaining several perspectives about the same topic, and for noting how individuals are influenced by each other in group situations. Powell et al. (1996) note the use of focus groups in order to obtain information on the group’s experiences on a given topic. Finally, Morgan and Kreuger (1993) stress how focus groups can help researchers determine the degree of group consensus on a given topic. In light of the research recommendations set forth by Morgan (1997), both focus group interviews were semi-structured according to the prompts in Appendices A and B. The mid-point focus group interview was limited to a forty-five minute session by the researcher, while the final focus group interview session lasted one and a half hours.

The focus group transcripts were triangulated with the quantitative data from the FIAS, SoCQ, and the DPPE fidelity instrument to address the validity concern traditionally associated with case studies. Triangulation helps alleviate researcher subjectivity, as the qualitative data is either congruent or incongruent with the collected quantitative data (Bogdan & Biklen, 2003).

Limitations

This study centers predominantly on the case of four RSS facilitators, and data is consequently drawn from this purposefully small sample (n = 4) for three of the four research questions. In contrast to the primary case study, the initial research question does include DPPE facilitators at both the RSS implementation and SU comparison sites. Like the case study sample, though, this separate sample is purposeful as well.

One limitation of this study is external validity, or the extent to which findings from this study are generalizable to a larger population. External validity is a typical

consideration for case study research (Yin, 2003; Bogdan & Biklen, 2003). Additionally, this study employs the common one group pretest-posttest design, thereby raising concerns of internal validity. These concerns include the validity factors of history, maturation, and testing (Campbell & Stanley, 1963).

The DPPE fidelity instrument is limited by its reliability. Alternate-form, test-retest, and internal consistency reliability measures were not appropriate, as the small sample of RSS facilitators was the first sample to complete this instrument (Gall et al., 2003). Also, the DPPE fidelity instrument asks RSS facilitators to self-report on their intended and actual degrees of fidelity implementation. In their review of early implementation studies, Fullan and Pomfret (1977) highlight the tendency to report fidelity but not teach with it and the over- and under-estimation of implementation efforts. Additionally, analysis procedures associated with the Stages of Concern data employ Wilcoxon Signed Rank tests to test for statistically significant increases/decreases in individual stages of concern. The small sample ($n=4$) results in an assigned p-value of .06 when employing such a statistical test (Hollander & Wolfe, 1999), resulting in a slight difference from the widely-accepted significance value of .05.

Finally, the RSS facilitators in this study received a stipend and graduate credit from SU for their roles in the implementation process. Additionally, all four receive a salary from the RSS. The introduction of monetary support in return for services rendered in the implementation process leads one to question whether the responses (both quantitative and qualitative) given in the case study are a result of the facilitators' own volition, the influence of the stipend and graduate credit, or the result of their association with their school system.

Analysis

DPPE Fidelity Instrument

The four RSS facilitators self-reported their intended and actual fidelity on an ordinal scale of *ideal*, *acceptable*, and *unacceptable* fidelity. While ordinal classifications have no inherent numeric value, each level of fidelity has a greater or smaller magnitude than another level. Therefore, a numeric value was assigned to each level of fidelity in order to allow for quantitative interval analysis (Agresti & Finlay, 1997). *Ideal* fidelity was assigned a numeric value of two, *acceptable* fidelity a numeric value of one, and *unacceptable* fidelity a zero value.

The DPPE fidelity instrument was designed as an individual-referenced measurement. Each facilitator's self-reported pre-implementation fidelity score were compared to the respective post-implementation fidelity score (Gall et al., 2003) in order to gauge individual changes in implementation fidelity. Additionally, measures of central tendency were determined in order to compare the facilitators' core component mean pre- and post-implementation scores in intended and actual implementation fidelity. It is these measures of central tendency that provide the data relevant to the third research question and related hypothesis.

Stages of Concern Questionnaire (SoCQ)

Raw and percentile scores for each facilitator's pre- and post-implementation concerns were calculated according to the Likert-scale analysis procedures set forth by the developers of the SoCQ. Analysis includes a comparison of each facilitator's pre/post-implementation percentile scores for five of the seven stages of concern (e.g.

personal, management, consequence, collaboration, refocusing) in comparison to the percentile scores for the other three facilitators. Each facilitator's pre/post-implementation scores are used to calculate a mean percentile score for the given stage of concern. It is these mean percentile scores that are used to either support or refute the hypotheses associated with the second research question. Additionally, post-hoc analysis procedures were employed in order to highlight the primary, secondary, and lowest stage(s) of concern reported for each facilitator.

Flanders Interaction Analysis System (FIAS)

The first research question and accompanying hypotheses scrutinize the types of verbal interactions that occur in the second and fourth Practicum sessions at both the RSS implementation and SU comparison sites. Once recorded, these sessions were transcribed by the researcher and then given to two raters for coding according to the FIAS categories.

Each rater had prior experience with the FIAS system and the process of coding verbalizations from audio recordings and real-time classroom observations. Rater A had approximately 1,000 hours and Rater B had approximately 150 hours of previous experience with teaching, coding, and analyzing the FIAS system. The coding for this study was slightly different from the raters' previous coding experiences, as they were asked to code each line of transcript from a Practicum session, resulting in approximately 1,500 lines of transcript per session, instead of coding from real-time observations or audio recordings.

Despite the raters' prior experiences with coding verbal interactions, the researcher conducted a FIAS training session with the two raters. During this two-hour session, the raters were given practice transcripts to code, at which time the researcher answered any questions about the coding process and clarified any coding discrepancies between the two raters. At the conclusion of the training session, the raters were given a 25% subset of the four Practicum transcripts to code so the percent agreement between the two raters could be calculated. The percentage of agreement was established for each rater across all ten categories of the FIAS, resulting in a mean percentage agreement of 89% (See Appendix E for percentage agreement calculations).

During the coding process, each rater reads a line of transcript and classifies that line of transcript according to one of ten FIAS categories. Each FIAS code is broadly categorized as an indirect teacher influence (categories 1-4), a direct teacher influence (categories 5-7), or student verbalization (categories 8-9). Analysis for each recorded practicum session includes ascertaining the ratio of indirect teacher influence to direct teacher influence. Within this analysis, the frequency of the use of questions by the two RSS facilitators (Mary and Teresa) was compared with the use of questions by the two SU facilitators. Additionally, the ratio of overall teacher influence (both indirect and direct) to learner engagement (student verbalizations) was assessed.

Each hypothesis was designed to ascertain if there is a difference between the site of implementation (RSS or SU) and the coded ratio of Flanders interaction (indirect teacher influence, questioning, direct teacher influence, student verbalization) (Agresti & Finlay, 1997). Each FIAS hypothesis will be rejected if there is a one percentage point or greater difference between verbal interaction patterns at the RSS implementation and SU

comparison sites. Conversely, the hypotheses will not be rejected if the difference in verbal interaction percentages is less than one percentage point (Flanders, 1970).

Qualitative Data

Qualitative data collected during this study includes two focus group interview transcripts. The original propositions that led to this case study centered on the implementation fidelity of social innovations and the concerns of educators in relation to new innovations. Consequently, the general strategy for analyzing qualitative data in this study focused on these two key propositions (Yin, 2003). Evidence of fidelity and concerns dependent variables in the qualitative data was coded and matched to the appropriate quantitative hypotheses.

The two focus group interviews were transcribed by the researcher. Initial codes were established from the hypotheses of this study. For example, the fifth hypothesis in this study addresses the Personal concerns of the facilitators. Consequently, an initial code (CON-PER) was established to represent any instance within the focus group transcripts that represented a Personal concern on the part of the four facilitators. With the initial codes derived from the hypotheses, the researcher coded 10% of the transcripts. During this initial analysis, additional codes were added. For example, during the coding process the researcher noted facilitator dialogue that emphasized the progression of their own concerns from the early (Self) to latter (Impact) stages of concern. This progression of concerns was not a specific hypothesis, but since it was a narrative strand that emerged, it was given a code (CON-PRO). The additional codes derived from the coding of the subset of transcripts were combined with the original set of codes. This complete set of codes (See Appendix C) was used to re-code both transcripts in their entirety.

The codes in the focus group interview transcripts were collated, yielding frequency count data that is reported in Chapter 4. Additionally, these codes revealed themes in the facilitators' rationale in making instructional decisions during the DPPE implementation process. These themes are reported in Chapter 5.

Procedures

The following section outlines this study's data collection procedures. Table 3.7 provides an overview of the types of assessment and the times at which each was given to the study's participants. A detailed description of each procedural step follows this table.

Table 3.7 – Overview of Data Collection Procedures

DPPE Implementation Assessment Times	DPPE Fidelity Instrument	Stages of Concern Questionnaire	Focus Group Interview
August 2004	X	X	
November 2004			X
May 2005	X	X	X

Immediately prior to the beginning of the 2004-2005 academic year in which the four RSS facilitators were responsible for the DPPE implementation, they were asked to complete both the DPPE fidelity instrument and the SoCQ. Additionally, a short demographics survey was issued at this time. The four facilitators were given no time constraints in which to complete the two instruments and the demographics survey, aside from the researcher's request that they complete the instruments in one sitting.

The four RSS facilitators were initially asked to report their *intended* degree of implementation fidelity on the DPPE fidelity instrument. The request for intended degree of implementation fidelity was made specifically in reference to the upcoming Seminar

and Practicum courses. Resulting self-reported fidelity instrument scores serve as a pre-test prior to the actual year-long implementation of the DPPE curriculum.

In addition to completing the DPPE fidelity instrument, the four facilitators were asked to complete the SoCQ. The cover letter to this questionnaire requested that the four facilitators report their *present* concerns in relation to the DPPE innovation. In similar fashion to the fidelity instrument, their reported concerns data reflect a pre-test baseline prior to the implementation of the DPPE Seminar and Practicum courses.

During the fall of 2004, the four RSS facilitators implemented the Seminar portion of the DPPE curriculum. In late November of the 2004-2005 academic year, prior to the completion of the Seminar course, a focus group interview of forty-five minutes in length was conducted between the reporting researcher and the four RSS facilitators. The purpose of this focus group interview was to address the rationale behind the facilitators' decisions regarding fidelity or adaptation of the DPPE Seminar curriculum. In addition to specific questions posed by the reporting researcher, opportunity was provided for open-ended commentary on the facilitators' rationale behind their curriculum decisions throughout the fall semester (Yin, 2003).

In the spring semester of the 2004-2005 academic year, the RSS facilitators implemented the Practicum portion of the DPPE curriculum. In order to assess the interaction patterns between two of the four RSS facilitators and their eleven mentor teacher participants, the reporting researcher observed and recorded the second and fourth Practicum class sessions in entirety. Mary and Teresa were responsible for the facilitation of the mentor teacher participants, but Mary served as the primary facilitator for both sessions. The total recorded interaction time for the second and fourth RSS

Practicum sessions was 3:33:09. The second and fourth Practicum sessions were recorded and observed by the reporting researcher, resulting in field notes that accompany the recorded events in the session.

At the completion of the spring semester of the 2004-2005 academic year, the DPPE fidelity instrument and the SoCQ were re-issued to the four RSS facilitators as a post-implementation assessment. Neither instrument was altered from the original pre-implementation assessment that occurred in August 2004. Directions for the SoCQ emphasized that the facilitators respond to each item in relation to their present concerns with the DPPE innovation. Instructions for the post-implementation DPPE fidelity instrument differed slightly from the pre-implementation instructions. In the fall pre-implementation assessment of fidelity, the fidelity instrument instructions asked the facilitators to report their *intended* degree of implementation fidelity. In the spring, the post-implementation fidelity instrument instructions asked the facilitators to self-report on the *actual* degree of implementation that occurred with the DPPE curriculum throughout the length of the entire implementation process.

In addition to issuing the post-implementation DPPE fidelity and SoC instruments, a final focus group interview with the four facilitators occurred at the completion of the Practicum course in the spring semester (May, 2005). In similar fashion to the November 2004 focus group interview, the purpose of this one and a half hour interview was to address the rationale behind the facilitators' decisions regarding fidelity or adaptation of the DPPE Practicum curriculum.

In the fall of 2005, the second and fourth Practicum sessions were recorded by the reporting researcher at the SU comparison site. The total recorded interaction time for

these two SU Practicum sessions was 3:45:55. The purpose of these recordings was to capture the verbal interactions between the SU DPPE facilitators and their mentor teacher participants enrolled in the SU Practicum course. These interaction patterns were coded and compared to the interaction patterns recorded from the same two RSS Practicum sessions.

Summary

This chapter provided a detailed account of the methods employed in order to examine research questions and hypotheses related to the implementation of the DPPE curriculum in a RSS. The overall study is primarily based on a case study examination of four RSS DPPE facilitators as they worked to implement the DPPE curriculum, independent of assistance from SU curriculum developers and facilitators. Three research questions and their hypotheses focus specifically on the degree of fidelity employed, the types of concerns expressed, and the fidelity rationale provided by the four RSS facilitators. Additionally, one of the four research questions extends beyond the case study format. This research question and accompanying hypotheses serve as a point of comparison between the RSS DPPE implementation site and the SU comparison site, as the verbal interaction patterns between the facilitators and teacher participants at both sites are examined.

The following chapter reports the findings from these four research questions in light of the preceding reviews of literature and methodology. The chapter will begin with an overview of the four research questions and their accompanying hypotheses, followed by a report of data pertaining to each individual hypothesis.

CHAPTER FOUR

Results

The purpose of this study is to examine the implementation of a social education innovation (DPPE), with a specific focus on the degree of fidelity employed and the concerns expressed by facilitators as they work through the implementation process. Four research questions and ten related hypotheses were proposed to quantitatively and qualitatively assess the degree of fidelity and concerns exhibited by the facilitators associated with the implementation of the DPPE curriculum in a RSS. This chapter highlights the research questions and hypotheses and reports the data from all methods of collection for each individual hypothesis.

Research Questions and Hypotheses

Four research questions and related hypotheses are proposed as the framework for this study. They are as follows:

1. What is the relationship between interaction patterns at the treatment and comparison group implementation sites, as measured by the Flanders Interaction Analysis System?

- H1 – There is no significant difference between the facilitators' and the comparison group's use of indirect teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H2 – There is no significant difference between the facilitators' and the comparison group's use of direct teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

- H3 – There is no significant difference between the facilitators’ and the comparison group’s use of questions in the DPPE implementation, as measured by the Flanders Interaction Analysis System.
- H4 – There is no significant difference between the facilitators’ and the comparison group’s percentage of teacher talk/student engagement, as measured by the Flanders Interaction Analysis System.

2. What concerns do facilitators express during the implementation of the DPPE innovation, as measured by the *Stages of Concern* Questionnaire?

- H5 – There will be a decrease in the facilitators’ *Personal* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H6 – There will be a decrease in the facilitators’ *Management* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H7 – There will be an increase in the facilitators’ *Consequence* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H8 – There will be an increase in the facilitators’ *Collaboration* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.
- H9 – There will be an increase in the facilitators’ *Refocusing* concerns in the comparison of pretest/posttest mean percentile scores, as measured by the Stages of Concern questionnaire.

3. What is the degree of fidelity employed by facilitators of the DPPE innovation, as self-reported in the DPPE fidelity instrument?

- H10 – The pretest core component mean fidelity score will be higher than the posttest core component mean fidelity score, as measured by the DPPE fidelity instrument.

4. What curricular and pedagogical elements of the DPPE innovation do facilitators identify as needing to maintain or change?

- a. What curricular and pedagogical changes, if any, are described by facilitators in focus group discussions?
- b. What is the facilitators' rationale for maintaining fidelity or introducing adaptations to the DPPE innovation?
- c. What curricular and pedagogical elements, if any, are described by facilitators as needing to be maintained?
- d. What concerns related to the DPPE implementation effort are expressed by the facilitators during focus group discussions?

With these research questions and hypotheses in mind, we now turn to an examination of the data collected as a result of the methods described in the previous chapter. The data is reported in this chapter in systematic fashion, beginning with the first research question and related hypotheses that address the verbal interaction patterns at both the RSS implementation site and the SU comparison site. Following this data, the remaining three research questions and their hypotheses strictly address the DPPE curriculum innovation in the RSS.

Research Questions, Hypotheses, and Resulting Data

Research Question 1: What is the relationship between interaction patterns at the treatment and comparison group implementation sites, as measured by the Flanders Interaction Analysis System?

In an effort to measure the degree of fidelity employed by the four RSS facilitators during the implementation of the DPPE curriculum, this initial research question centers on the verbal interactions between facilitators and participants at the implementation site in comparison to the verbal interaction patterns exhibited by facilitators associated with SU. Four distinct hypotheses were constructed in order to analyze specific types of verbal interactions: indirect teacher/facilitator influence, direct teacher/facilitator influence, use of questions by facilitators, and ratios of teacher/facilitator influence to student engagement. As noted in the previous chapter, two DPPE sessions were recorded at both the RSS and SU implementation sites. Each of the four hypotheses is examined below, with specific attention given to the differences (or lack thereof) between the type of verbal interaction, the DPPE Practicum session, and the session site.

Hypothesis 1: There is no significant difference between the facilitators' and the comparison group's use of indirect teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

This hypothesis addresses the percentage of indirect teaching influence of facilitators in relation to the total amount of teaching influence employed during the DPPE sessions. As noted in the Chapter Three description of the Flanders Interaction Analysis System (FIAS), indirect teaching influence occurs in a classroom setting when a teacher/facilitator accepts the feelings of students, offers praise or encouragement,

accepts and/or uses the ideas of students, and asks questions of students. Table 4.1 delineates each DPPE site, the session, indirect teaching frequency counts, total frequency counts for indirect and direct teaching, indirect teaching percentile, difference in percentile scores for each site, mean difference, and standard deviation.

Table 4.1 – Indirect Teaching Influence According to DPPE Site and Session

Site and Session	Indirect Teaching Frequency	Total Teaching Frequency	Indirect Teaching Percentile	Difference in Indirect Teaching Percentile	Mean Difference	Standard Deviation
A1	286	780	.37			
B1	497	893	.56	.19	.125	.09
A2	156	397	.39			
B2	122	271	.45	.06		

(A represents the RSS DPPE cohort. B represents the SU DPPE cohort).

The first hypothesis seeks to discern the differences, if any, in indirect teaching influence between the implementation and comparison sites. In session one, we note a difference in the percentage of indirect teaching of 19%, indicating that facilitators at the SU site provided a greater percentage of indirect interactions with learners. Similarly, session two shows a difference of indirect teaching interactions of 6%. Once again, the SU site provided more indirect interactions during the second observed session than the RSS site. The total mean difference was 12.5%. This difference would be considered significant according to Flanders (1970). These differences in the percentage of indirect teaching between the RSS implementation site and the SU comparison site lead to a rejection of the first hypothesis.

Hypothesis 2: There is no significant difference between the facilitators’ and the comparison group’s use of direct teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

This hypothesis addresses the percentage of direct teaching influence of facilitators in relation to the total amount of teaching influence employed during the DPPE sessions. Direct teaching influence occurs in a classroom setting when a teacher/facilitator provides information via lecture, gives directions to students, or criticizes and/or justifies his/her authority in the classroom. Table 4.2 delineates each DPPE site, the session, direct teaching frequency counts, total frequency counts for indirect and direct teaching, direct teaching percentile, differences in percentile scores for each site, mean difference, and standard deviation.

Table 4.2 – Direct Teaching Influence According to DPPE Site and Session

Site and Session	Direct Teaching Frequency	Total Teaching Frequency	Direct Teaching Percentile	Differences in Direct Teaching Percentile	Mean Difference	Standard Deviation
A1	494	780	.63	.19	.125	.09
B1	396	893	.44			
A2	241	397	.61	.06		
B2	149	271	.55			

(A represents the RSS DPPE cohort. B represents the SU DPPE cohort).

This second hypothesis seeks to discern the differences, if any, in direct teaching influence between the implementation and comparison sites. In session one, we note a difference in the percentage of direct teaching of 19%, indicating that facilitators at the RSS site provided a greater percentage of direct interactions with learners. Session two also shows a difference in direct teaching of 6% in favor of the RSS. Again, this indicates that the RSS site provided more direct interactions during the second observed session than the SU site. The total mean difference was 12.5%. This difference would be

considered significant according to Flanders (1970). These differences in the percentage of indirect teaching between the RSS implementation site and the SU comparison site lead to a rejection of the second hypothesis.

Hypothesis 3: There is no significant difference between the facilitators’ and the comparison group’s use of questions in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

This hypothesis addresses the frequency of questions, and subsequent response opportunities, employed during the two DPPE sessions. Asking questions of students implies a solicitation of information or opinion, with the intent that students reply. It is important to note that rhetorical questions are not coded in this FIAS category. Table 4.3 delineates each DPPE site, the session, frequency counts of questions posed, total frequency counts for all teacher/facilitator verbalizations, percentile of questions, differences in percentile scores for each site, mean difference, and standard deviation.

Table 4.3 – Question Frequencies According to DPPE Site and Session

Site and Session	Question frequencies	Total Teaching Frequency	Question Percentile	Difference in Question Percentiles	Mean Difference	Standard Deviation
A1	106	780	.14			
B1	133	893	.15	.01		
A2	50	397	.13			
B2	41	271	.15	.02	.015	.007

(A represents the RSS DPPE cohort. B represents the SU DPPE cohort).

This third hypothesis seeks to discern the differences, if any, in the frequency of questions occurs between the implementation and comparison sites. Table 4.3 shows the frequency of questions posed by site and observation sequence, with slight differences of one and two percent indicating that SU facilitators offered questions and subsequent response opportunities more frequently. The mean difference of .015 favoring SU would

be considered significant according to Flanders (1970) and leads to the rejection of the third hypothesis.

Hypothesis 4: There is no significant difference between the facilitators' and the comparison group's percentage of teacher talk/student engagement, as measured by the Flanders Interaction Analysis System.

This hypothesis addresses the number of student engagement opportunities relevant to the total amount of teacher/facilitator talk employed during the two DPPE sessions. It is important to note that the “students” engaged in the DPPE curriculum are the twenty-one mentor and novice teacher participants. The Flanders Interaction Analysis System (FIAS) codes student engagement according to the context surrounding a student comment. If the student makes a verbal contribution in response to a teacher/facilitator’s question or statement, then the FIAS designates this student engagement as student talk – response. If the student initiates a comment within the class session, independent of a request or prompt by the teacher/facilitator, or if the student’s comment is unpredictable or original in content, then the FIAS designates this student engagement as student talk – initiation. It is important to note that when students are working in small groups, this talk time is coded as student talk – initiation. Table 4.4 delineates each DPPE site, the session, student engagement frequency counts, the total teaching and student engagement frequency counts, student engagement percentiles, differences in percentile scores for each site, mean difference, and standard deviation.

Table 4.4 – Student Engagement Frequencies According to DPPE Site and Session

Site and Session	Student Engagement Frequencies	Total Teaching and Student Engagement Frequencies	Student Engagement Percentiles	Differences in Student Engagement Percentiles	Mean Difference	Standard Deviation
A1	869	1649	.53			
B1	1063	1956	.54	.01	.005	.007
A2	878	1275	.69			
B2	590	861	.69	.00		

(A represents the RSS DPPE cohort. B represents the SU DPPE cohort).

The fourth hypothesis seeks to examine the differences, if any, in student engagement opportunities between the implementation and comparison sites. In session one, we note a difference in student engagement of 1%, indicating that the facilitators at the SU site provided a greater percentage of opportunities for students to initiate commentary and respond to others. The second session, though, shows no difference in student engagement between the RSS and SU sites. The total mean difference was .005, indicating a difference that would not be considered significant according to Flanders (1970). The lack of significant difference in the percentage of student engagement between the RSS and SU sites leads the researcher to not reject the fourth hypothesis.

In sum, three of the four FIAS hypotheses were rejected; the fourth hypothesis associated with the amount of student engagement in the DPPE Practicum sessions was not rejected. This concludes the data comparing the RSS implementation effort to the SU comparison site. We now turn exclusively to the data associated with the four RSS DPPE facilitators.

Research Question 2: What concerns do facilitators express during the implementation of the DPPE innovation, as measured by the *Stages of Concern* Questionnaire?

The next five hypotheses address mean percentile scores for facilitators of the DPPE curriculum innovation in the RSS. Concerns were assessed twice, once immediately prior to the beginning of the DPPE implementation effort and again immediately following the implementation effort. Reported data for each hypothesis shows pre- and post-implementation SoCQ mean percentile scores for each stage of concern. SoCQ percentile scores indicate the relative intensity of facilitator concern in reference to the DPPE curriculum innovation. The higher the percentile score, the more intense the concerns. The lower the score, the less intense the concerns for that given stage of concern. There are no absolute high and low watermarks for concerns levels. Instead, high and low concerns levels are relative to the other stage scores for each facilitator (Hall, George, & Rutherford, 1979).

Hypothesis 5: There will be a decrease in the facilitators' Personal concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the *Stages of Concern* questionnaire.

This hypothesis addresses the Personal concerns exhibited by the DPPE facilitators. According to the *Stages of Concern* model, Stage 2 – Personal concerns center on an individual's uncertainty about an innovation, his/her role with the innovation, and his/her inadequacy in meeting the demands of the innovation. These anxieties extend to the individual's role in relation to rewards, organizational structure, decision making processes, potential conflicts and degree of personal commitments (Hall, George, & Rutherford, 1979). Figure 4.1 shows pre-/post-implementation mean percentile scores for the Personal stage of concern.

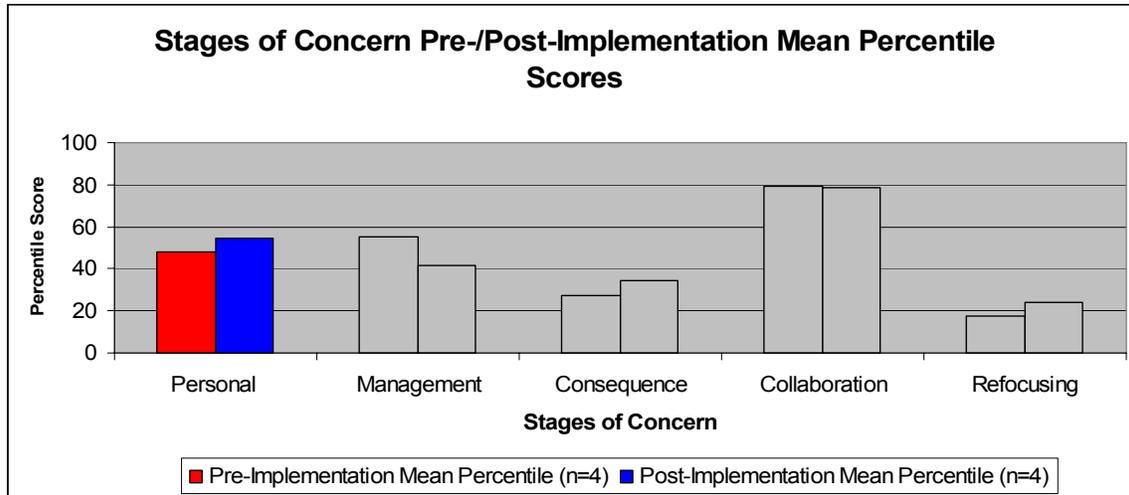


Figure 4.1 – Mean Percentile Scores for Personal Stage of Concern

Figure 4.1 shows that the Personal mean percentile scores for the RSS facilitators increase across the implementation time frame by six percentile points. This hypothesis anticipated a decrease in Personal concerns from the pre- to post-implementation. The post-implementation increase in Personal concerns results in a rejection of the fifth hypothesis. A Wilcoxon Signed Rank test was conducted to assess whether or not this increase in Personal concerns was statistically significant, with results indicating that the increase was not statistically significant ($p > .5$).

Hypothesis 6: There will be a decrease in the facilitators’ Management concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the *Stages of Concern* questionnaire.

This hypothesis scrutinizes the facilitators’ Management concerns in relation to the DPPE implementation process. Stage 3 – Management concerns center on an individual’s anxiety in relation to the processes, tasks, and resources associated with an innovation. Specifically, management concerns are often related to issues such as the efficiency, organization, schedules, and time demands of an innovation (Hall, George, &

Rutherford, 1979). Figure 4.2 shows the mean percentile scores for the Management concerns prior to and immediately following the DPPE implementation process.

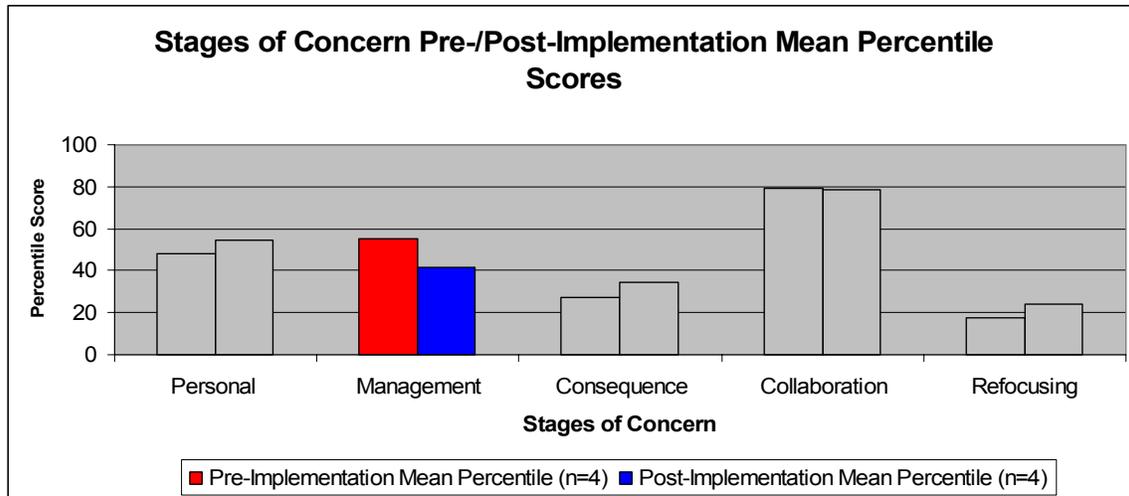


Figure 4.2 – Mean Percentile Scores for Management Stage of Concern

Figure 4.2 shows a reduction in Stage 3 – Management concerns across the implementation time frame by 13.75 percentile points. This reduction is congruent with the sixth hypothesis. Consequently, the researcher does not reject the sixth hypothesis that suggests a mean decrease in facilitators’ Management concerns from pre- to post-implementation. A Wilcoxon Signed Rank test was conducted to assess whether or not this decrease in Management concerns was statistically significant, with results indicating that the decrease was not statistically significant ($p > .5$).

Hypothesis 7: There will be an increase in the facilitators’ Consequence concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the *Stages of Concern* questionnaire.

The seventh hypothesis in this study addresses the facilitators’ Consequence concerns in relation to the DPPE implementation process. Stage 4 – Consequence

concerns focus attention on the relationship between the innovation and the teacher participants. The presence of Consequence concerns suggests facilitator attention to the relevance of the innovation for the teacher participants, and a focus on evaluating the participants' performances and competencies (Hall, George, and Rutherford, 1979). Figure 4.3 shows the mean percentile scores for the Consequence stage of concern prior to and immediately following the DPPE implementation process.

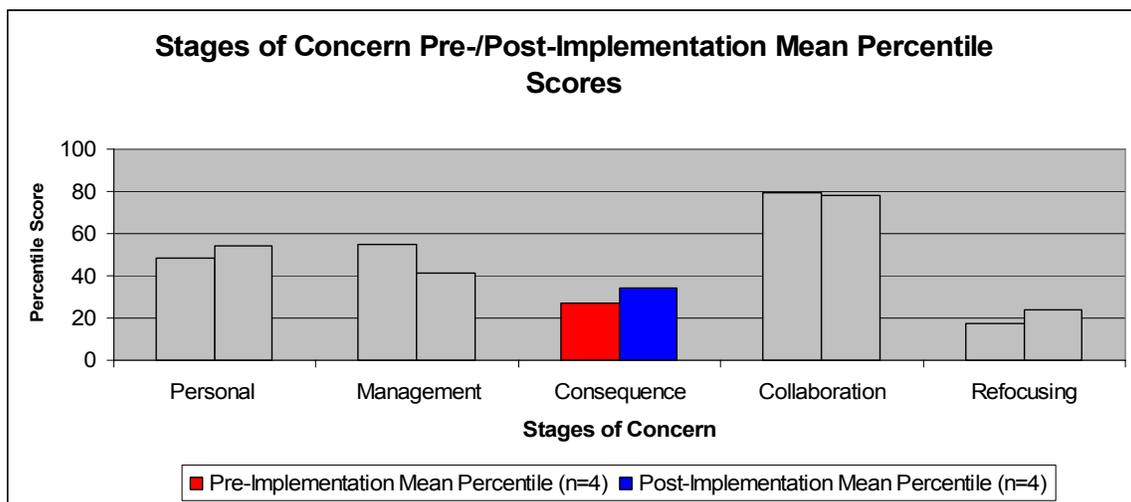


Figure 4.3 – Mean Percentile Scores for Consequence Stage of Concern

Figure 4.3 shows that the mean percentile scores for the Consequence stage of concern did increase across the implementation time frame by 7.5 percentile points. The data support the seventh hypothesis which suggests a mean increase in facilitators' Consequence concerns. Thus, the seventh hypothesis was not rejected. A Wilcoxon Signed Rank test was conducted to assess whether or not this increase in Consequence concerns was statistically significant, with results indicating that the increase was not statistically significant ($p > .5$).

Hypothesis 8: There will be an increase in the facilitators' Collaboration concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the *Stages of Concern* questionnaire.

This hypothesis addresses the four facilitator's Collaboration concerns during the implementation process. Stage 5 – Collaboration concerns center on the relationships between persons working with new innovations. Specifically, these concerns focus on aspects of coordination and cooperation among the persons working through the implementation process (Hall, George, & Rutherford, 1979). Figure 4.4 shows the mean percentile scores for the Collaboration stage prior to and immediately following the DPPE implementation process.

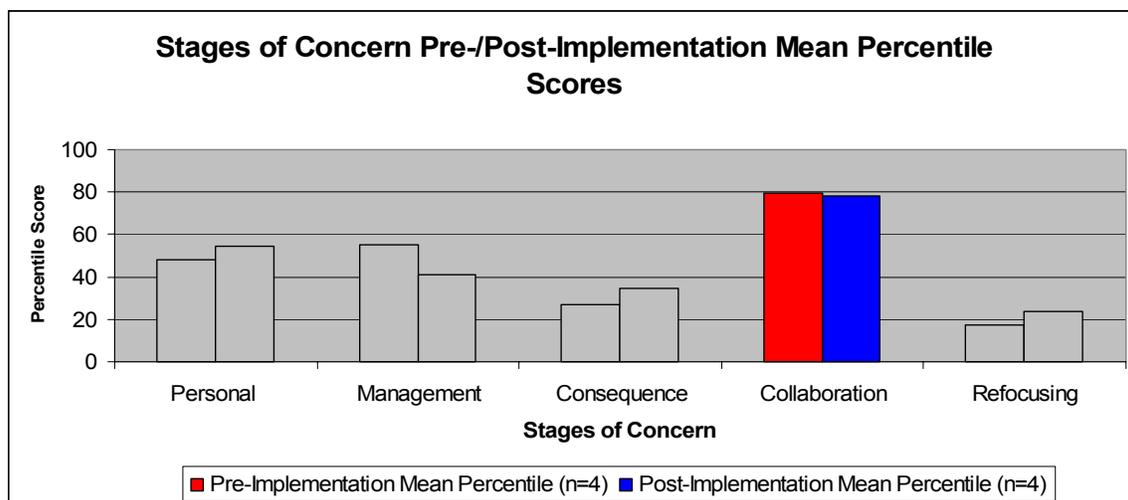


Figure 4.4 – Mean Percentile Scores for Collaboration Stage of Concern

Figure 4.4 shows that the mean percentile scores for the Collaboration stage decreased slightly (1.0 percentile point) across the ten-month implementation time frame. This data is in contrast to the eighth hypothesis that suggests a mean increase in Collaboration concerns for the RSS facilitators. Thus, the eighth hypothesis was rejected. A Wilcoxon Signed Rank test was conducted to assess whether or not this decrease in

Collaboration concerns was statistically significant, with results indicating that the decrease was not statistically significant ($p > .5$).

Hypothesis 9: There will be an increase in the facilitators’ Refocusing concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the *Stages of Concern* questionnaire.

The ninth hypothesis in this study addresses the Refocusing concerns exhibited by the DPPE facilitators during the implementation process. Stage 6 – Refocusing concerns focus on the exploration of adaptations to an innovation. The adaptations could include amendments to any of the innovation’s core components or a replacement of the components with alternative innovations altogether. Regardless of the introduction of amendments or completely new alternatives, individuals expressing Refocusing concerns indicate increased attention to changing the existing form of the innovation (Hall, George, & Rutherford, 1979). Figure 4.5 shows the mean percentile scores for Refocusing concerns prior to and immediately following the DPPE implementation process.

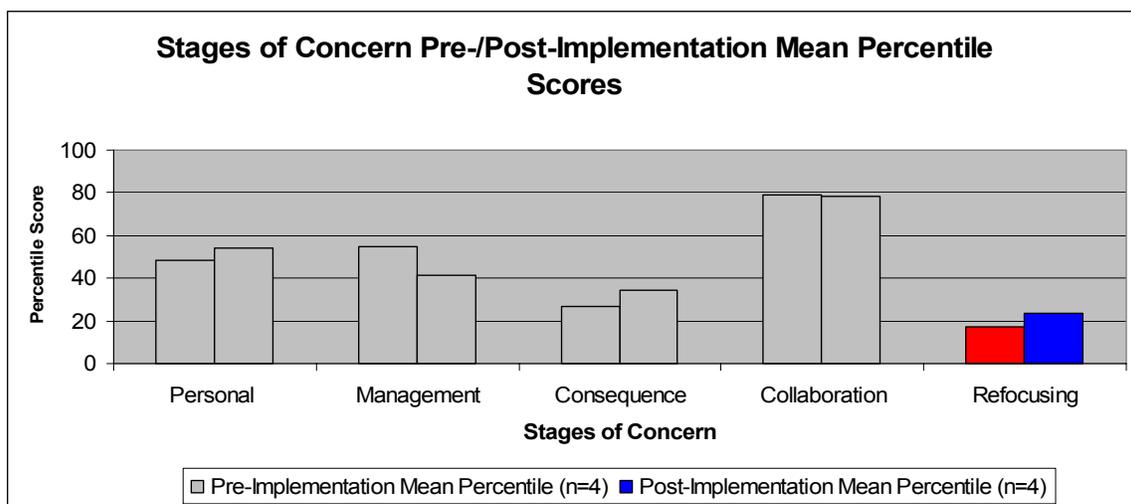


Figure 4.5 – Mean Percentile Scores for Refocusing Stage of Concern

Figure 4.5 shows that the mean percentile scores for Refocusing concerns increased between assessments by 6.25 percentile points. This data supports the ninth hypothesis that suggests a mean percentage increase in Refocusing concerns across the implementation time frame. Thus, this hypothesis was not rejected. A Wilcoxon Signed Rank test was conducted to assess whether or not this increase in Refocusing concerns was statistically significant, with results indicating a statistically significant increase in the mean percentile scores for Refocusing concerns ($\alpha = .062$)

The above data highlights the types of concerns expressed by the facilitators prior to and immediately following the DPPE curriculum innovation. Of the five hypotheses, two were rejected. The next research question and hypothesis specifically addresses the degree of fidelity employed by the facilitators as they implement the DPPE curriculum innovation within the RSS context.

Research Question 3: What is the degree of fidelity employed by facilitators of the DPPE innovation, as self-reported in the DPPE fidelity instrument?

In an effort to specifically measure the degree of fidelity employed by the facilitators during the process of implementing the DPPE curriculum, a 58-item DPPE fidelity instrument was designed. This instrument measures fidelity to eight DPPE core components that represent a balance of the DPPE conditions and curriculum tenets. The following hypothesis and accompanying data report the degree of fidelity to the eight DPPE core components.

Hypothesis 10: Pre-implementation core component mean fidelity scores will be higher than post-implementation core component mean fidelity scores, as measured by the DPPE fidelity instrument.

This research hypothesis examines the degree of fidelity employed by facilitators of the DPPE curriculum. Degree of fidelity is assessed on a three-tiered scale (2 = Ideal; 1 = Acceptable; 0 = Unacceptable) using a 58-item fidelity instrument in a pre-/post-implementation format. The items in the fidelity instrument assess the degree of implementation fidelity to eight DPPE core components. Table 4.5 shows the eight DPPE core components, the facilitators' mean scores per component, the mean difference between pre- and post-assessment, and standard deviation.

Table 4.5 – Pre-/Post-implementation DPPE Component Fidelity Scores

Core Components	Pre-Implementation Mean	Post-Implementation Mean	Mean Difference	Standard Deviation
Participants and Program Structure	1.784	1.716	-.068	.048
Administrative Support	1.196	1.143	-.053	.037
Facilitator Dispositions	1.922	1.938	+.016	.011
Knowledge of Curriculum	1.839	1.756	-.083	.058
Skill with Instruction	1.850	1.750	-.10	.071
Knowledge of Supporting Theory/Research	1.839	1.750	-.089	.062
Attention to Building Relationships	1.125	1.000	-.125	.088
Knowledge of Technology	1.062	1.187	+.125	.088
Core Component Means	1.577	1.530	-.047	.033

Prior to the implementation of the DPPE curriculum, the four facilitators were asked to assess their *intended* degree of fidelity by rating themselves on the three-tiered scale for each of the fifty-eight fidelity instrument items. Across all eight core components, the core component mean rating was 1.577, indicating that the facilitators intended to implement the DPPE core curriculum components at a less than ideal (<2.000) level. It is important to note the core components that show scores less than the component mean of 1.577: *Administrative Support* (1.196); *Attention to Building Relationships* (1.125); and *Knowledge of Technology* (1.062).

At the completion of the DPPE implementation process, the four facilitators were asked to assess their *actual* degree of implementation fidelity to the DPPE's core components by rating themselves on the same fidelity instrument. Across all eight core components, the core component mean rating was 1.530, indicating that the facilitators actually implemented the DPPE curriculum at a less than ideal (<2.000) level and at a level slightly less (.04) than what they had originally intended. Thus, the tenth hypothesis was not rejected. The same three components, *Administrative Support* (1.143); *Attention to Building Relationships* (1.000); and *Knowledge of Technology* (1.187) show mean scores below the core component mean of 1.530.

The initial three research questions and hypotheses required the employment of quantitative methods in order to assess verbal interaction patterns, concerns, and fidelity in association with the DPPE curriculum. The remaining research question differs in intent and type of methodology, as it required a qualitative assessment of the facilitators' rationale behind decisions regarding either fidelity or adaptation to the DPPE curriculum.

Research Question 4: What curricular and pedagogical elements of the DPPE innovation do facilitators identify as needing to maintain or change?

In an effort to strike at decisions related to fidelity and adaptation of the DPPE elements, this fourth research question is accompanied by four sub-questions. They are as follows:

- a. What curricular and pedagogical changes, if any, are described by facilitators in focus group discussions?
- b. What curricular and pedagogical elements, if any, are described by facilitators as needing to be maintained?
- c. What is the facilitators' rationale for maintaining fidelity or introducing adaptations to the DPPE innovation?
- d. What concerns related to the DPPE implementation effort are expressed by the facilitators during focus group discussions?

In an effort to address this final research question and sub-questions, two focus group interviews were conducted with RSS DPPE facilitators, yielding large quantities of coded narrative data. Consequently, it is important to note that the narrative reported below represents the coded interview transcripts, but is not intended to be all-inclusive. In an effort to represent each strand of interview data, figures are presented that illustrate the frequency counts for each coded strand of data. These figures, unlike the narrative examples, are structured such that they represent every coded strand of data that occurred in the analysis of the interviews.

Focus Group Interviews

Two focus group interviews were conducted during the implementation of the DPPE curriculum, one at the mid-point and one at the completion of the implementation process. Each interview protocol was established to assess the changes, if any, made to the DPPE curriculum, the rationale behind these changes, and any concerns related to the implementation process. The transcription of these interviews resulted in narrative that was coded according to the procedures outlined in Chapter three. The resulting coded narrative is reported across three strands: Implementation Fidelity, Fidelity Rationale, and Concerns. For each strand, figures were prepared that portray the frequency of coded narrative at the mid-point focus group interview (shaded in blue), while the total number of codes for both the mid-point and final interviews is delineated in red. Examples of facilitator responses follow each figure.

Implementation Fidelity

Facilitators responded to questions regarding additions to, modifications of, and their experiences with the DPPE curriculum. (Appendices A and B provide the exact questions asked during both semi-structured focus group interviews). Their responses included narrative focused on the needs of the DPPE teacher participants, their own instruction, and the DPPE curriculum.

Figure 4.6 highlights three primary strands of data (Instruction, Curriculum, Learner) that emerged from questions on fidelity to the DPPE curriculum innovation. Each of these three primary strands of data is sub-divided into fifteen specific codes that emerged from the data. Figure 4.6 shows how frequently these specific codes emerged in

the course of the two focus group interviews. It is important to note that the frequencies represented in blue occurred at the mid-implementation focus group interview. The frequencies shown in red represent the total number of codes for that given sub-strand of data, indicating how the final focus group codes differ from the mid-implementation focus group codes in frequency as well as demonstrating the total number of codes for that given sub-strand. For example, in association with the primary Curriculum data strand, the Reflective Coaching code emerged from transcribed interviews three times during the mid-implementation focus group interview (shown in blue). The Reflective Coaching code emerged a total of five times across the two focus group sessions (shown in red), indicating that the final focus group interview only contained two additional references to Reflective Coaching. As an additional example, in association with the primary Learner data strand, the facilitators referenced their Knowledge of Participants on three occasions (shown in blue). The Knowledge of Participants code increased eight fold during the final focus group session, as the total implementation frequency count indicates twenty-four references on the part of the facilitators.

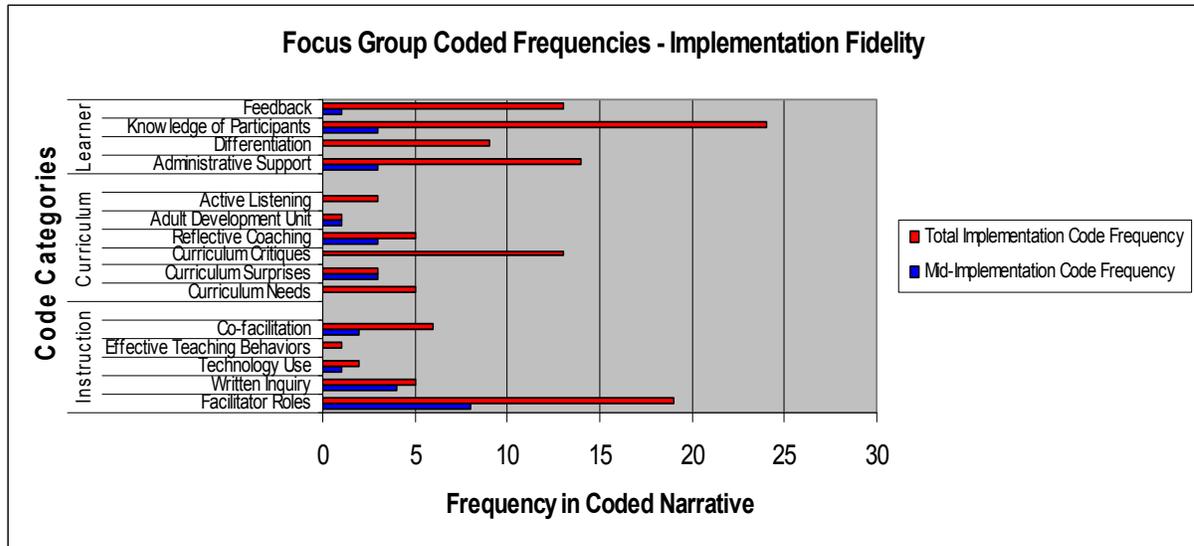


Figure 4.6 – Focus Group Implementation Fidelity Frequencies

Figure 4.6 represents primary and sub-strands of data that emerged in relation to maintaining fidelity or introducing adaptations to the DPPE curriculum innovation. While Figure 4.6 represents the frequency of these strands of data, it is important to scrutinize the data itself. Consequently, the following text highlights facilitator comments related to the primary data strands of fidelity to the DPPE innovation in light of the Learner, Instruction, and Curriculum data strands.

In a conversation stem centering on the needs of the teacher participants, Mary commented that the facilitators had to continually assess who was and who was not making meaning from the DPPE curriculum sessions. She noted plainly, “And so, they are not ready to grapple with that....” Additionally, Teresa commented on the disequilibrium of some teacher participants, emphasizing “...to see the ones that had some struggles, one (teacher) from one of our middle schools, she was saying ‘I don’t think I can do this’....we were very encouraging, you can do it, and she made it through and did what she needed to do....”

In addition to verbally demonstrating their knowledge of and differentiation for the teacher participants, the facilitators also responded with references to their instructional efforts. Wendy noted that as they emphasized pedagogical skills through the DPPE curriculum, they also tried to model the effective teaching behaviors; "...there were things that we try to be consciously aware and try to model those teacher behaviors....did we do that 100% of the time....no probably not, but we did try."

In addition to the facilitators' comments on their instructional efforts and their knowledge of the teacher participants, they also commented on the DPPE curriculum. Teresa noted that the Adult Development unit of instruction "...is gonna be the most challenging one...because we probably know the least about (adult development) of all the topics." Mary offered a critique of the DPPE curriculum, suggesting "...maybe some of the handouts assumed a level of knowledge that I don't think our participants necessarily had...and therefore, some of the paperwork seemed a little confusing."

Fidelity Rationale

Facilitators responded to questions regarding their rationale for either maintaining fidelity to the DPPE curriculum or introducing additions and/or modifications during the implementation process (Appendices A and B provide the exact questions asked during both semi-structured focus group interviews). Their responses included narrative related to additions/modifications made to the DPPE curriculum, fidelity to the DPPE curriculum, and changes they might consider making in future DPPE implementation efforts.

Figure 4.7 shows six strands of data that emerged from questions related to the facilitators' rationale for either maintaining fidelity or introducing adaptations to the

DPPE curriculum innovation. As noted earlier, the codes that emerged during the mid-implementation focus group are shown in blue, while the total frequency of a given code is shown in red. The quantitative difference between the red and blue bars represents how frequently these six codes emerged during the final focus group interview. As an example, facilitators made two references to modifying the DPPE curriculum during the mid-implementation focus group interview. These frequencies increased two and one-half times during the final focus group interview, as the facilitators made seven total references to curriculum modifications.

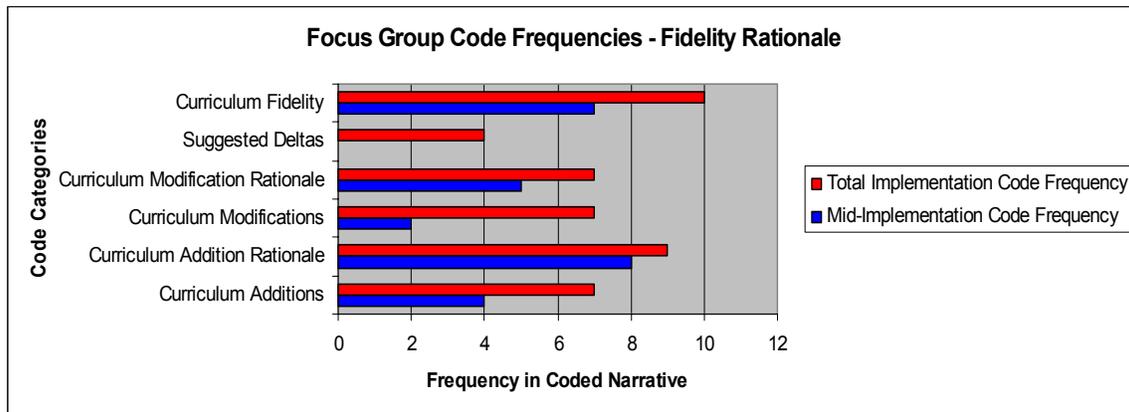


Figure 4.7 – Focus Group Fidelity Rationale Frequencies

As noted above, the frequency of coded narrative strands does not provide a complete picture. Consequently, it is important to scrutinize the facilitators’ actual responses. What follows are examples related to the facilitators’ rationale in either maintaining fidelity or introducing adaptations to the DPPE curriculum innovation.

The facilitators recognized that the teacher participants were having difficulty constructing lesson plans with specific, measurable outcomes after examining their efforts with the curriculum early in the Seminar semester. As Wendy notes, “...they

would put down ‘the student will remember’ or ‘the student will learn’, instead of ‘the student will be able to do X out of Y’...” Consequently, the facilitators added to the Seminar curriculum a lesson and accompanying pedagogical literature on constructing measurable and thorough lesson plans.

Looking ahead to future DPPE curriculum efforts, the facilitators also suggested changes to enhance the readiness of the teacher participants. Teresa emphasized the apparent shock on the part of the teacher participants’ as they realized the scope of the DPPE curriculum and the subsequent challenges that such a detailed curriculum entailed. Teresa believed that the teacher participants’ seemingly unprepared state is due, in part, to the manner in which school administrators know and present fully-encompassing descriptions of the DPPE curriculum to their teachers. Teresa noted, “...we’ve had upfront conversations with the principals, with what this (curriculum) is all about...talking about it verbally and putting in the written communication ‘please make sure people what this is all about’...Maybe some sort of interview process with interested (teacher) participants is necessary, just to see...is this (curriculum) really something you want to do.”

Concerns

Facilitators responded to questions related to their concerns during the implementation of the DPPE curriculum innovation (Appendices A and B provide the exact questions asked during both semi-structured focus group interviews). Their responses included narrative related to their own concerns, and their progression through the stages of concern model during the ten-month implementation process. Additionally,

the facilitators acknowledged the various stages of concern represented by the DPPE teacher participants.

Figure 4.8 shows the frequency with which seven concerns-related data strands emerged from the two focus group interviews. As noted earlier, the frequencies shown in blue represent data expressed during the mid-implementation focus group interview. It is important to note that two of the seven strands (Stage Progression; Refocusing) are represented in red, thus indicating that these two strands only emerged during the final focus group interview. Interestingly, Collaboration concerns were raised seven times in the mid-implementation focus group. In comparison, this same stage of concern was emphasized two fold in the final focus group interview, for a total of twenty-one recorded Collaboration codes.

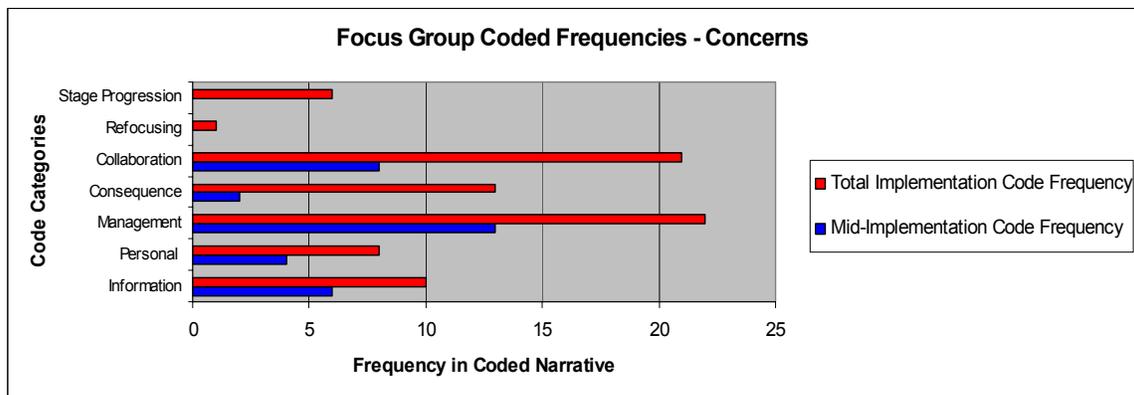


Figure 4.8 – Focus Group Concerns Frequencies

As noted earlier, it is important to provide examples of the data represented by the above figure. One example of a narrative response occurred during the mid-implementation focus group interview, when Mary noted her early-stage Stage 2 – Personal concerns, indicating that she was “feeling overwhelmed.” In her new role as a

DPPE facilitator, she also emphasized her Stage 1 – Informational concerns as she commented on the adjustments she was having to make, “...so coming from a student last year and being a teacher (facilitator) this year in the same course, I’ve had some surprises with ‘Oh, I remember that’ and ‘No, I don’t exactly remember that’ and having to revisit some information....”

Post-hoc Analysis

Trends in Facilitators’ Stages of Concern

Earlier in this chapter, data was reported in conjunction with the second research question, addressing increases and decreases in five stages of concern prior to and following the DPPE implementation process. For each of the five concerns hypotheses, pre-/post-implementation percentile scores were compared to each other for a given stage of concern. This representation of the data, however, does not provide the reader with an analysis across all seven stages of concern, nor does it address trends in high and low concerns stages for the RSS facilitation team. Thus, the following post-hoc analysis addresses the highest, second highest, and lowest stage scores for each facilitator prior to and immediately following the DPPE curriculum implementation process, beginning with a graphic representation of the data in Table 4.6 and continuing with a brief discussion of the trends in high and low stages of concern.

Table 4.6 – Pre-/Post-implementation High and Low Stages of Concern

Facilitators	Pre-Impl. Highest SoC Stage	Pre-Impl. Second Highest SoC Stage	Pre-Impl. Lowest SoC Stage	Post-Impl. Highest SoC Stage	Post-Impl. Second Highest SoC Stage	Post-Impl. Lowest SoC Stage(s)
Teresa	0	5	6	5	0	4
Wendy	5	0	6	5	0	6
Susan	5	3	6	5	0	4,6
Mary	3	0	6	4	5	2,1

The pre-implementation highest and second highest stages are noteworthy, as three of the four facilitators indicate both significant Stage 0 – Awareness and Stage 5 – Collaboration concerns. Additionally, two of the four facilitators indicate Stage 3 – Management concerns. The most striking similarity is the lowest stage of concern prior to the implementation process. All four facilitators designated Stage 6 – Refocusing concerns as the stage offering the least amount of anxiety.

Striking patterns are also evident in the post-implementation portion of Table 4.6. Three of the four facilitators reported that Stage 5 – Collaboration concerns were most significant, with the remaining facilitator (Mary) indicating that those Collaboration concerns were her second highest stage. Additionally, three of the four facilitators also denoted Stage 0 – Awareness concerns as their second highest stage of concern. Finally, the lowest SoC stage reported after the implementation process indicated a focus on Stage 4 – Consequence and Stage 6 – Refocusing concerns.

Table 4.6 denotes some striking patterns in reference to how these high and low level concerns change during the implementation process. Prior to the implementation process, the four facilitators predominantly reported Stage 5 – Collaboration and Stage 0 – Awareness concerns. At the conclusion of the implementation process, these same two

stages of concern remained dominant. The facilitators consistently reported a lowest pre-implementation stage of concern at Stage 6 – Refocusing. While Refocusing concerns were not consistent for all four facilitators at the end of the implementation process, they were still evident in conjunction with Stage 4- Consequence, Stage 1 – Informational, and Stage 2 – Personal concerns.

Summary

In an effort to measure the degree of fidelity and the facilitator concerns associated with the implementation of the DPPE curriculum, data was collected via a mixed-method approach. The degree of fidelity and the concerns of the DPPE facilitators was measured quantitatively using the DPPE fidelity instrument, the *Stages of Concern* Questionnaire, and the Flanders Interaction Analysis System. Additionally data was collected using qualitative focus group interviews in order to corroborate and expand upon the quantitative data. This chapter outlined the resulting data according to the four research questions and accompanying hypotheses, including a Post-hoc analysis on emerging individual facilitator *Stages of Concern* profiles.

The following final chapter of this dissertation draws conclusions and suggests implications for the data reported in this chapter. Chapter five will meld the findings from this study with the DPPE, Implementation, and Concerns theoretical frameworks discussed in Chapter two. Additionally, this final chapter will address the implications of this study on Borke’s model of professional development programs.

Chapter Five

Interpretations and Implications

In the 2004-2005 academic year, the RSS facilitators assumed sole responsibility for the implementation of a deliberate psychological and professional education (DPPE) innovation within their school system. This study centers on the facilitators' degree of fidelity to the DPPE curriculum and their concerns associated with the DPPE implementation process. This chapter interprets the data reported in the previous chapter, using the DPPE framework and Borko's phases of professional development as the broad lenses through which interpretations and implications are discussed.

Borko (2004) discusses four facets of a professional development system (facilitators, teacher participants, a professional development curriculum, and scholastic context) in relation to three distinct phases of professional development. The first phase emphasizes the justification of a professional development curriculum through the systematic collection of evidence that documents program effectiveness on teacher learning. In this first phase, the focus is on the relationship between the professional development curriculum and the teacher learners. Earlier in Chapter two, a review of literature documented the positive effects the DPPE framework and related curriculum interventions had on teachers' pedagogy and dispositions.

The introduction of professional development facilitators is the catalyst for the transition from Borko's first to second phase of a professional development system. Borko's second phase extends beyond the professional development curriculum and teacher learners to further encompass the relationship between curriculum facilitators, the curriculum, the teacher learners, and a new scholastic context. This second phase

specifically scrutinizes integrity or fidelity to the professional development program, suggesting that modifications and additions occur when facilitators work to implement a given curriculum. This study focuses on one professional development program, a deliberate psychological and professional education curriculum innovation, and the actions RSS facilitators took to either maintain fidelity or introduce additions and modifications to the curriculum.

While the RSS facilitators did have some experiences with the DPPE framework and curriculum immediately prior to this study, this research centers on the first academic year in which these facilitators were solely responsible for the implementation of the DPPE curriculum, aside from any aide from the original developers/facilitators of the program. Hall, George, Rutherford and others at the University of Texas-Austin have documented how individuals working with a new innovation systematically progress through the *Stages of Concern* framework (1979). Consequently, in addition to measuring the degree of fidelity associated with the DPPE curriculum, this study also assesses the types of concerns the RSS DPPE facilitators experienced during the process of implementing the DPPE curriculum innovation.

Chapter four reported data for this study's four research questions and accompanying hypotheses. This chapter will interpret that data systematically, according to each research question and related hypothesis. It is important to note, though, that converging data from other research questions and hypotheses will be included in order to better illustrate or illuminate a particular finding. Specifically, the qualitative data associated with the fourth research question will be used to guide the interpretations of the first three quantitative research questions, as the original purpose of this fourth

research question was to provide explanatory rationale and elaborative data. Finally, the implications of this study's findings are discussed in reference to the introduction of professional development programs in school settings, measuring implementation fidelity, and areas of future inquiry. At this juncture, we turn to the first research question and the comparison of verbal interaction patterns between the RSS and SU contexts.

Interpretation of Flanders Interaction Analysis System Data

In an effort to measure the degree of fidelity employed by RSS facilitators during the 2004-2005 DPPE implementation effort, the first question incorporates DPPE facilitators and mentor teacher participants from SU as a site of comparison of verbal interaction patterns during DPPE Practicum sessions. Four hypotheses were proposed in conjunction with this first research question. Each was designed to scrutinize one of four FIAS categories: teacher indirect talk, teacher direct talk, questioning, and student engagement. All four hypotheses proposed that there would be no significant difference in verbal interaction patterns between the RSS and SU facilitators. Three of these four hypotheses were rejected, indicating a significant difference between type of verbal interaction and DPPE Practicum site. Table 5.1 highlights the four hypotheses, the resulting FIAS percentages, the differences between the RSS and SU sites, and the results of the each hypothesis. What follows Table 5.1 is an interpretation of each hypothesis and the resulting data.

Table 5.1 – Synopsis of FIAS Data and Hypotheses Determinations

Hypothesis	Site and Session	Percentile	Difference (RSS – SU) (A – B)	Hypothesis Result
H1 – Teacher Indirect	A1	.37	-19	Reject H1
	B1	.56		
	A2	.39	-6	
	B2	.45		
H2 – Teacher Direct	A1	.63	+19	Reject H2
	B1	.44		
	A2	.61	+6	
	B2	.55		
H3 – Questions	A1	.14	-.01	Reject H3
	B1	.15		
	A2	.13	-.02	
	B2	.15		
H4 – Student Engagement	A1	.53	-.01	Do Not Reject H4
	B1	.54		
	A2	.69	.00	
	B2	.69		

(A represents the RSS DPPE cohort. B represents SU DPPE cohort)

Hypothesis 1: There is no significant difference between the facilitators’ and the comparison group’s use of indirect teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

Indirect teaching influence includes the frequency with which teacher participants’ feelings and ideas are accepted and used, praise and encouragement is offered, and response opportunities are provided by DPPE facilitators. According to the data reported in Chapter four and highlighted above in Table 5.1, this first null hypothesis was rejected, indicating a significant difference in the amount of indirect teaching influence between the RSS and SU DPPE sites.

In the first Practicum lesson (A1), the RSS facilitators employed indirect teaching methods only 37% of the time, a full 19 percentage points less than the SU facilitators (B1). Similarly, there is a six percentage point difference for the second lesson. Across the two lessons, RSS facilitators used indirect teaching methods an average 38% of the

time, while SU facilitators employed indirect teaching methods an average 51% of the time.

When a DPPE facilitator employs an indirect teaching method, such as the acceptance of a participant's ideas about classroom management, he/she is reinforcing the theoretical tenets on which the curriculum is built. Indirect teaching methods center on formative responses to students (Flanders, 1970). Similarly, the DPPE conditions and curriculum center on the idea that teacher participants are guided through a constructive meaning making process according to the cognitive-developmental assumption that their organizing principles, interpretations, and reasoning will become more complex, integrated, and principled over time. The acceptance and use of participants' ideas, the acceptance of feelings, and the use of positive reinforcement directly support the gradual growth towards more complex and integrated reasoning. As participants share ideas and feelings, they literally give voice to their thought processes. The opportunity to verbalize their thoughts, feelings, interpretations, and reasoning about a given teaching-related subject becomes the first step in the construction of more complex meaning. The more often the facilitators employ indirect, response-oriented verbalizations in a DPPE session, the more often they foster and amplify the constructive meanings expressed by the teacher participants.

The data for the first hypothesis on indirect teaching percentages indicate that the RSS facilitators employed a significantly lower average amount of indirect teaching verbalizations in comparison to SU facilitators. This significant difference in formative and supportive indirect verbalizations indicates that there is variation in the way the curriculum is verbally facilitated between the university and school system contexts.

Hypothesis 2: There is no significant difference between the facilitators' and the comparison group's use of direct teaching influence in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

Before proceeding further, it is important to emphasize the relationship between direct and indirect teaching influence. According to the FIAS, when a teacher/facilitator speaks in a given classroom session, this verbalization is broadly categorized as either an indirect or a direct teacher/facilitator verbalization. All of the facilitator "talk" recorded and coded in the two DPPE sessions is categorized as either indirect or direct teaching influence. Consequently, the indirect and direct percentages reported in Chapter four and interpreted in this chapter are symbiotic. For example, 40% indirect teaching influence in one session results in a direct teaching influence percentage of 60% for that same session.

Direct teaching influence includes the frequency with which facilitators give directions, facilitator authority is justified or criticisms of participants are imparted, and/or content-related facts and opinions are provided in lecture form. According to the data reported in Chapter four and highlighted above in Table 5.1, this second null hypothesis was rejected, indicating a significant difference in the amount of direct teaching influence between the RSS and SU DPPE sites. In the first Practicum lesson, the RSS facilitators employed direct teaching interaction patterns 63% of the time, nineteen percentage points more than SU facilitators. Similarly, data from the second lesson show the use of direct teaching influence 61% of the time and six percentage points higher than the SU comparison site. Across the two Practicum lessons, RSS facilitators employed direct teaching verbal interactions an average of 62% of the total session time.

In interpreting these percentages of direct teaching influence, it is important to note that direct teaching influence is not inherently poor practice. There are instances in any curriculum and in any lesson where directions must be given by a curriculum facilitator. Additionally, there are appropriate times for teacher/facilitators to provide content-related facts and opinions in a direct-instruction lecture form. With this caveat in mind, recall that the DPPE conditions and curriculum center on the student meaning-making process. Consequently, a predominance of direct teaching influence deprives teacher participants of opportunities to grapple with curriculum materials, ideas, or concepts in a constructive environment. Essentially, for any given curriculum, a balance between direct and indirect teaching influence is key. For the DPPE curriculum and the adult learners involved, less direct teaching influence is appropriate and desirable.

In both DPPE sessions under scrutiny, the RSS facilitators employed more direct teaching verbalizations than did the comparative SU facilitators. The obvious interpretation is that the RSS facilitators lectured and gave directions more often. This increased amount of initiated talk on the part of the RSS facilitators is more than a percentage, though. Returning to the session transcripts, the researcher noted that instead of responding to teacher participants' inquiries and statements in an indirect manner (accepting their ideas and feelings), the RSS facilitators tended to use the participants' comments as a springboard to the next point in the DPPE lesson plan. Essentially, instead of advancing the lesson ideas by focusing on the participants' comments, the RSS facilitators advanced the lessons by quickly weaving the comments back into the next section of planned lecture. The significant prior experiences of the two SU facilitators are crucial at this juncture, as they were effective at patiently waiting for the appropriate

and insightful participant comment to lead to the next point in the session lesson, while the RSS facilitators were more likely to directly influence the flow and direction of the lesson, and subsequent participant meaning making. This is not to say that the RSS facilitators simply lectured throughout the entire DPPE curriculum; direct instruction methods were evident in both DPPE sessions at both sites. However, the RSS facilitators did post an average 62% direct teaching influence, suggesting that in comparison to the SU facilitators, the DPPE sessions in the RSS were less centered on the comments, thoughts, and feelings of the teacher participants and more focused on the instructions and information provided by the facilitators themselves.

In sum, there is a significant difference between the RSS and SU facilitation groups in the amount of direct teaching influence provided to teacher participants. With regard to the overarching question of fidelity, this data indicates that the RSS facilitators provided directions and lectured more often than originally intended by the DPPE curriculum designers.

Hypothesis 3: There is no significant difference between the facilitators' and the comparison group's use of questions in the DPPE implementation, as measured by the Flanders Interaction Analysis System.

The FIAS classifies the use of questions as an indirect teaching verbal interaction. In the formation of research questions and hypotheses, the researcher chose to specifically scrutinize this particular category of indirect teaching, independent of the other three indirect teaching categories. When a facilitator asks a question about content or procedure, s/he expects a teacher participant to answer. Thus, the frequency of questions in a given DPPE session has a direct effect on the frequency of student responses. The ultimate goal of the DPPE conditions and curriculum is to foster the

construction of knowledge on the part of the DPPE teacher participants. Consequently, the frequency of questions and the resulting opportunities for student responses is noteworthy, as these responses serve as first moves towards knowledge construction (Flanders, 1970).

According to the data reported in Chapter four and highlighted above in Table 5.1, this third null hypothesis was rejected, indicating a difference in the frequency of questions elicited by facilitators at the RSS and SU sites. In the first and second Practicum lessons, RSS facilitators issued questions 14% and 13% of the time, respectively. In comparison, SU facilitators offered questions and participant response opportunities a constant 15% of the time across both lessons.

There are two important interpretations of this data. First, while the hypothesis was technically rejected, the differences in the percentage of questions and response opportunities between the RSS and SU sites are slight. Simply put, the RSS facilitators were closely aligned with the SU facilitators in the frequency of elicited questions and their requests for teacher participant responses and input. Thus, one may safely interpret that the RSS facilitators are implementing response opportunities as originally intended by the DPPE curriculum developers.

The second interpretation of these questioning percentages lies not in the questioning category itself, but in the larger context of indirect teaching influence. Recall that the FIAS classifies indirect teaching as the combination of four types of verbal interactions: Accepting student feelings, accepting and using student ideas, praise and encouragement, and questioning. The first hypothesis and resulting data indicated that there was a significant difference between the amounts of indirect teaching influence at

the RSS and SU sites. This third hypothesis and related data, however, show that there is only a slight difference in the frequency of questions asked in those same sessions. Thus, one may reasonably interpret that the large differences in indirect teaching influence at the two sites can be contributed primarily to the other three types of verbal interactions associated with indirect teaching influence.

The comparison of questioning percentages across facilitation sites indicates that there is little difference in the frequency of elicited questions and subsequent response opportunities. Thus, while the RSS facilitators differed from the SU facilitators across the broader categories of indirect and direct teaching influence, they adhered to the DPPE curriculum's emphasis on questions and student response opportunities.

Hypothesis 4: There is no significant difference between the facilitators' and the comparison group's percentage of teacher talk/student engagement, as measured by the Flanders Interaction Analysis System.

The first three hypotheses address different categories of teacher/facilitator talk. Teacher/facilitator talk is a combination of directly initiated comments on the part of the instructor and indirect comments often made in response to student/participant talk. In contrast to measurements of teacher/facilitator talk, FIAS categories eight and nine measure the frequency of student/participant response and self-initiated talk, respectively. The fourth hypothesis in this study was designed to assess potential differences in the percentage of teacher participant engagement (i.e. student talk) between the RSS and SU sites. According to the data reported in Chapter four and highlighted above in Table 5.1, this fourth hypothesis was not rejected, indicating no significant difference in the percentage of teacher participant engagement at the RSS and SU sites.

There are two key considerations for this data on teacher participant engagement. First, the percentages of questions asked at both DPPE sites are very similar, thus suggesting similar opportunities for student engagement. The participants' responses, however, vary significantly in length. Essentially, some participants respond to facilitators' questions succinctly, while others issue responses that approach 20-25 coded lines of text. Thus, similar percentages of questions posed produce similar response opportunities, as coded by FIAS category eight. However, as the participants take advantage of these response opportunities, they often elaborate beyond a simple response to the question. Consequently, what starts as a category eight – student response becomes a category nine – student-initiated comment. This transition occurs when a teacher participant answers a question, but continues talking, elaborating with unsolicited anecdotes or comments. These unpredictable student-initiated comments differ significantly in length and result in a varying number of FIAS category nine code tallies.

As indicated above, it is possible for variation to occur in the amount of student-response and student-initiated comments allowed as the facilitators guide each session. Another critical category nine classification occurs frequently in DPPE sessions, and accounts for a significant amount of the student/participant talk time. Recall from Chapter two that the DPPE curriculum is specifically designed to foster small group talk, as mentor and novice teacher groups evaluate their cycles of assistance and teaching episodes, respectively. According to the FIAS, these small group efforts are coded as category nine – student-initiated talk, as the four facilitators do not interfere or verbally guide these peer group sessions. Thus, the amounts of coded small group time represent another area where the RSS and SU facilitation sites could differ.

With these considerations in mind, we turn to interpreting the data for this hypothesis. At times, teacher participants at both DPPE sites initiated comments within the session, aside from any prompt or question by a facilitator. Additionally, there were variations in the amount of student work available for small group discussion per session and site. Despite these variables that are largely outside the control of the facilitators, the student engagement verbal interaction patterns in the RSS indicate that the teacher participants were engaged an average of 54% and 69% for the first and second lessons, respectively. These high percentages of participant engagement signify that the teacher participants were able to take part in each session by answering questions, initiating their own commentary, and/or through small group interactions. Most importantly, these percentages are virtually identical to the student engagement percentages recorded at the comparative SU facilitation site. Consequently, the absence of rejection for this fourth hypothesis indicates that the RSS facilitators provided for and maintained an appropriate amount of student engagement during the sessions as originally intended by DPPE curriculum developers.

As one looks holistically at the FIAS data across the DPPE sessions, it is important to note that the SU facilitators serve as the more experienced comparison group. The demographics on the four RSS and two SU facilitators reported in Chapter three show a clear distinction in the number of years of experience the SU facilitators hold with regard to the DPPE conditions and the formation of the DPPE curriculum. In spite of these differences in levels of DPPE experience, this study centers on the degree of fidelity employed by the RSS facilitators during the DPPE implementation process. In an effort to maintain fidelity, these facilitators may closely adhere to the DPPE

curriculum components. However, they are further responsible for facilitating the curriculum in a manner that fosters a supportive and challenging meaning-making environment. This is where the FIAS categories become critical, as the verbal interaction patterns give the researcher insight into the question of fidelity by providing a gauge for measuring the quality of the meaning-making environment, despite differences in facilitators' levels of experience. With the above FIAS interpretations in mind, we now turn to the interpretations of the DPPE fidelity instrument data.

Interpretation of DPPE Fidelity Instrument Data

The third research question and accompanying hypothesis in this study address the degree of fidelity employed by the four RSS facilitators as they work to implement the DPPE curriculum innovation within their school system context. As noted in Chapter three, the DPPE fidelity instrument was employed prior to and immediately following the DPPE implementation effort. The DPPE fidelity instrument centers on eight core components that represent a meld of the seven DPPE conditions and curriculum. The eight core components, on which each of the instrument's fifty-eight items is based, are as follows:

- Participants and Program Structure
- Administrative Support
- Facilitator Dispositions
- Knowledge of Curriculum
- Skill with Instruction
- Knowledge of Supporting Theory/Research
- Attention to Building Relationships
- Knowledge of Technology

The DPPE facilitators were asked to indicate the degree of fidelity employed for each instrument item. Degree of fidelity was measured on a three-tiered *unacceptable*,

acceptable, and *ideal* scale, represented by a 0-2 quantitative score. Chapter four reported core component mean scores for the facilitators’ pre- and post-implementation fidelity instrument assessments, as well as an indicator of either positive or negative mean change across the implementation time frame. For the purpose of interpretation, the following Table 5.2 represents the same data reported earlier in Chapter four. What follows this table is an interpretation of this DPPE fidelity instrument data:

Table 5.2 – Pre-/Post-implementation DPPE Component Fidelity Scores

Core Components	Pre-Implementation Mean	Post-Implementation Mean	Mean Difference	Standard Deviation
Participants and Program Structure	1.784	1.716	-.068	.048
Administrative Support	1.196	1.143	-.053	.037
Facilitator Dispositions	1.922	1.938	+.016	.011
Knowledge of Curriculum	1.839	1.756	-.083	.058
Skill with Instruction	1.850	1.750	-.10	.071
Knowledge of Supporting Theory/Research	1.839	1.750	-.089	.062
Attention to Building Relationships	1.125	1.000	-.125	.088
Knowledge of Technology	1.062	1.187	+.125	.088
Core Component Means	1.577	1.530	-.047	.033

Prior to beginning the DPPE curriculum implementation effort, the RSS facilitators indicated that they *intended* to implement the curriculum with a degree of fidelity between acceptable (1) and ideal (2), represented by the core component mean

value of 1.577. Similarly, at the conclusion of the implementation effort, the facilitators reported a nearly identical core component mean value of 1.530, indicating that their *actual* implementation efforts differed only slightly from what they originally intended. This minimal change in core component means (-.047) indicates that the facilitators not only maintained a relatively high degree of fidelity to the DPPE curriculum, but also differed only slightly from their original high fidelity intentions.

In consideration of the overall high degrees of intended and actual fidelity employed during the implementation process, it is important to interpret the individual core components according to their higher and lower degrees of fidelity. First, RSS facilitators report high implementation fidelity for five core components across both the pre- and post-implementation assessments, represented by fidelity scores that approach the ideal standard set by DPPE curriculum developers. These five components (*Participants and Program Structure; Facilitators Dispositions; Knowledge of Curriculum; Skill with Instruction; Knowledge of Supporting Theory/Research*) largely center on the methods, skills, dispositions, and procedures critical to affecting positive change in participants' pedagogy and disposition.

The three remaining core components (*Administrative Support; Attention to Building Relationships; Knowledge of Technology*) show much lower intended and actual degrees of fidelity, with approximate *acceptable* standards of implementation. While the *Administrative Support* core component is largely outside of the control of the four RSS facilitators, as they have little influence on how much time, logistical, and formative support individual school administrators offer their DPPE teacher participants, the remaining two core components (*Attention to Building Relationships; Knowledge of*

Technology) are within their grasp and require very specific skill sets and time parameters. Fidelity instrument items associated with the *Knowledge of Technology* component address implementing technology help sessions, as well as a thorough knowledge of the installation, use, and archival of digital video technologies. The lower fidelity score for this component indicates that the facilitators are comfortable with the technological requirements of the curriculum activities, but have not fully integrated every DPPE technology support mechanism. The *Attention to Building Relationships* component involves a specific interpersonal skill set that requires additional time beyond the allotted amounts for DPPE sessions. This core component largely centers on the facilitators conducting individual *Getting Acquainted* conferences with each teacher participant at some point in the fall Seminar course. The absence of such conferences, and the resulting unacceptable ratings on those related instrument items, reduced that component's overall fidelity score.

One may reasonably interpret from the core component means that the RSS facilitators implemented with a high degree of fidelity the DPPE components that directly addressed either the curriculum or the teacher participants, sans the formal *Getting Acquainted* conferences. In contrast, one may also interpret that the facilitators did not address components or component items that were largely out of their control or that required significant additional time on their part aside from their already demanding DPPE instructional and assessment responsibilities. Thus, the overall high degrees of fidelity associated with five core instructional components, coupled with lower but acceptable degrees of fidelity associated with three primarily administrative core

components result in very acceptable (1.577; 1.530) pre- and post-implementation degrees of fidelity during the DPPE implementation effort.

The FIAS and DPPE fidelity instrument data have direct connections to this study's overarching question of implementation fidelity. We now turn to an examination and interpretation of the RSS facilitators' concerns in light of the implementation process and the question of fidelity.

Interpretation of Stages of Concern Data

In recognition of the complexities associated with a ten-month implementation process, this study also focused on the concerns of the RSS facilitators as they assumed their new roles. Like the DPPE fidelity instrument, the SoCQ was employed in a pre/post-implementation format in order to assess the facilitators' stages of concern prior to and immediately following the DPPE implementation effort. Chapter four reported data for five different concerns hypotheses. Additionally, a post-hoc analysis addressed the trends in highest, second highest, and lowest stage of concern across all seven stages in the SoC model. What follows is an interpretation of the five concerns hypotheses, beginning with Table 5.3 that shows the initial predication for each concerns hypothesis, the actual reported concerns, and the results for each hypothesis. Following the interpretations of the five concerns hypotheses, an interpretation of the post-hoc analysis is given in consideration of higher and lower trends in the facilitators' stages of concern.

Table 5.3 – Synopsis of Concerns Hypotheses and Results

Hypothesis	Concerns Prediction Across Implementation (Increase/Decrease)	Facilitator Concerns	Hypothesis Result
H5 – Personal	Decrease	Increase	Reject
H6 – Management	Decrease	Decrease	Do Not Reject
H7 – Consequence	Increase	Increase	Do Not Reject
H8 – Collaboration	Increase	Decrease	Reject
H9 – Refocusing	Increase	Increase	Do Not Reject

Research Hypothesis 5: There will be a decrease in the facilitators’ *Personal* concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the Stages of Concern questionnaire.

Data reported in Chapter four and summarized above in Table 5.3 indicate that facilitators’ Personal concerns increased across the DPPE implementation time frame, resulting in a rejection of the fifth hypothesis that suggests an overall decrease in facilitators’ Personal concerns. The increase in facilitators’ Personal concerns indicates intensified anxieties with regard to the demands of the DPPE curriculum and with their abilities to adequately fulfill their roles in the implementation process.

This data is counterintuitive. While the facilitators should register some Stage 2 – Personal concerns, one would not expect these concerns to increase across the implementation process. Instead, one would expect less intense ego-oriented concerns in relation to the DPPE innovation, with emphasis on an increase in feelings of adequacy and a growing comfort with the demands of the DPPE innovation. This increase in ego-oriented concerns, however, implies a continued focus on how the innovation impacts them as individuals. Specifically, the RSS facilitators are in complex new roles as agents

of change. Thus, the increase in Personal concerns represent the disequilibrium associated with making meaning out of a new facilitation experience that requires high levels of understanding and implementation action. This interpretation is further supported by the post-hoc data that shows a predominance of Stage 0 – Awareness concerns. This additional perspective suggests that a complex and progressing DPPE implementation process combined with the facilitators’ numerous other personal and professional responsibilities resulted in increased Personal concerns regarding how the facilitators could adequately equilibrate to and fulfill *all* of their required roles.

Research Hypothesis 6: There will be a decrease in the facilitators’ *Management* concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the Stages of Concern questionnaire.

Data reported in chapter four and summarized in the above Table 5.3 indicate that facilitators recorded a reduction in Stage 3 – Management concerns across the implementation time frame. This decrease in Management concerns is congruent with the sixth hypothesis, resulting in an absence of rejection. A reduction in the facilitators’ Management concerns implies less anxiety toward the organization, efficiency, and logistical demands of the DPPE curriculum innovation.

In interpreting this data, it is important to consider the facilitators’ prior experiences with the DPPE curriculum innovation. In conjunction with SU facilitators, Teresa and Wendy assisted in the facilitation of the DPPE curriculum during the 2003-2004 academic year. These experiences as DPPE co-facilitators required less time and preparation, as the SU facilitators were primarily responsible for the materials, lesson plans, and logistics associated with the earlier DPPE curriculum effort. In this 2004-2005 process, though, Teresa and Wendy served in new roles as independent DPPE

curriculum facilitators. Thus, one would expect them to have higher Management concerns at the beginning of the implementation effort, as they are now solely responsible for all of the logistical demands associated with the DPPE curriculum. Similarly, Susan and Mary were in new roles as DPPE facilitators. Like Teresa and Wendy, they faced the logistical and organizational challenges of the DPPE curriculum for the first time. Not surprisingly, their pre-implementation SoCQ Management scores indicate high percentiles relevant to their other stages.

The facilitators' post-implementation decreases in Management concerns indicate an increased comfort with the general management tasks associated with the DPPE implementation process. Essentially, one may safely interpret that the facilitators began to equilibrate to the logistical demands of the DPPE curriculum as the implementation process progressed.

Research Hypothesis 7: There will be an increase in the facilitators' *Consequence* concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the Stages of Concern questionnaire.

Data reported in chapter four and summarized above in Table 5.3 indicate an increase in the facilitators' Stage 4 – Consequence concerns. This increase is congruent with the seventh hypothesis, resulting in an absence of rejection. An increase in Consequence concerns implies that as the DPPE implementation effort progressed, the facilitators grew more concerned and attentive to the impact of the DPPE curriculum on the teacher participants, with particular attention given to the participants' progress with the curriculum competencies.

Focus group interview data provides some additional insights into the facilitators' specific Consequence concerns. Teresa commented that the expectations associated with the DPPE curriculum are high and "...the word is out that (the curriculum) is good." Continuing, she also noted that these expectations are not always made clear by school administrators as they encourage their teachers to become DPPE participants. Consequently, Teresa notes "...these are good classes and participants learn a lot, but (they) really have to want to do this." Later, Susan, Teresa, and Wendy all commented on those participants who did not take full advantage of the learning opportunities the DPPE curriculum afforded them. "The ones that didn't put in 100% didn't reflect about (measurable outcomes) and their lesson plans were still wrong. There were attendance issues and participation issues...and some were still at that 0 or 1 phase of concern... 'What's in it for me?'" Mary compared her prior experience as a teacher participant with her current role as a DPPE facilitator, emphasizing that the responses she received from the previous facilitators were "...well written and thoughtful, and made me feel good about the work I'd done...and so I wanted to give that, that same thing back to the (teacher participants) I was responding to this year..." In recognition of her role as a "more capable other," Mary effectively summarized her strong consideration of the teacher participants, saying "Am I teaching this course in a way that these participants who are putting in all of this work are going to get something out of it?"

These facilitator comments help contextualize the SoCQ Consequence scores, indicating that the facilitators did actively attend to the relationship between the DPPE curriculum and the teacher participants. In sum, the seventh hypothesis was not rejected, as data indicate that the facilitators' Consequence concerns increased across the DPPE

implementation time frame. Narrative examples from the focus group interviews are congruent with the SoCQ data, indicating that the facilitators' were primarily concerned about the degree of participant engagement and how they as facilitators could guide the teacher participants through the meaning-making process.

Research Hypothesis 8: There will be an increase in the facilitators' *Collaboration* concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the Stages of Concern questionnaire.

Data reported in chapter four and summarized above in Table 5.3 indicate a decrease in the facilitators' Stage 5 – Consequence concerns. This decrease is incongruent with the eighth hypothesis, resulting in a rejection of that hypothesis. A decrease in Collaboration concerns implies less anxiety toward coordination and cooperation between the four facilitators, suggesting an enhanced degree of comfort and stability with the achieved level of teamwork and cooperation among the facilitators as they worked toward successfully implementing the DPPE curriculum.

At this juncture it is important to note the relative intensity of the pre- and post-implementation Collaboration percentiles. Prior to the implementation process, the facilitators expressed high Collaboration concerns with a mean percentile score of 79.25. In comparison, the facilitators' post-implementation mean percentile score was 78.25, one mean percentile point lower than it was ten months earlier. There was technically a decrease in Collaboration concerns, and thus a rejection of the eighth hypothesis. However, in comparison to the other stages of concern, the Collaboration stage of concern remained of greatest importance to the facilitators across the entire implementation process.

The dominance of Collaboration concerns raises two important considerations, of which the focus group interviews inform. First, one may reasonably interpret that the facilitators were concerned about how they would equilibrate to their new roles and collaborate with each other in order to properly implement the curriculum and be responsive to the DPPE teacher participants. Second, the facilitators' significant Collaboration concerns suggest that there was additional attention given to the challenge of team-teaching. Facilitators' focus group comments support these interpretations. Teresa highlighted Collaboration concerns as she noted that the presence of four facilitators "...take(s) the pressure off any one single person..." Wendy spoke to the alleviation of Collaboration concerns through weekly facilitator planning sessions, "...we'd review (the upcoming lesson plan), see if anybody had any questions, if everybody was feeling comfortable..." Finally, Susan noted that as the implementation effort progressed and the facilitators grew more comfortable with the curriculum and their individual facilitation roles, they began to interject and add to the comments and teachings of the other facilitators. Teresa responded, saying "Yeah, I saw that click with you....so you'd be saying something and I would interject...and then a few classes later, you began to interject and we could piggy back on one another and I could, I could see that 'click' one night."

In sum, the intensity of the facilitators' Collaboration concerns is of primary importance, as significant pre- and post-implementation collaborative efforts are evident in both the quantitative SoCQ and qualitative verbal representations.

Research Hypothesis 9: There will be an increase in the facilitators' *Refocusing* concerns in the comparison of pre-/post-implementation mean percentile scores, as measured by the Stages of Concern questionnaire.

Data reported in chapter four and summarized above in Table 5.3 indicate an increase in the facilitators' Stage 6 – Refocusing concerns. This increase is congruent with the ninth hypothesis, providing enough evidence to not reject the ninth hypothesis that suggests a mean percentile increase in facilitators' Refocusing concerns. The researcher conducted a Wilcoxon Signed Rank test to measure the significance of the increase in Refocusing concerns. Test results indicate that this increase represents a statistically significant gain for the facilitators' Refocusing concerns. A statistically significant increase in Refocusing concerns suggests that as facilitators initiated work with the DPPE curriculum, they began to consider immediate and/or future adaptations to the curriculum. Increased attention to curriculum adaptations includes possible alternatives to either the processes or components associated with the DPPE curriculum innovation, including either the amendment of components or the introduction of alternative components.

While the Wilcoxon Signed Rank test does indicate a statistically significant increase in Refocusing concerns, it is important to consider the context of this statistic. The facilitators recorded very low Refocusing concerns prior to the implementation process, indicating that they were hardly concerned about changing the curriculum before actually beginning to implement it. Thus, the post-implementation assessment of Refocusing concerns is particularly sensitive to any noted desire on the part of the facilitators to adapt the DPPE curriculum. Consequently, it is important to consider the relatively low intensity of the pre-implementation, and especially the post-

implementation, Refocusing concerns before one places too much emphasis on the statistically significant gain in this stage.

Qualitative data provides some additional context for the interpretation of these Refocusing concerns. In the November 2004 focus group interview, the facilitators noted one addition they made to the DPPE curriculum in the form of specific lessons and additional assignments on writing measurable outcomes. Teresa summarized the facilitators' thoughts, noting, "...we saw a need to talk about writing lesson plans and writing instructional objectives...and having them do some reflecting after they write information about that." In a comment that followed, Mary added that beyond that particular deliberate addition to the Seminar curriculum, future curriculum modifications occurred only in presentation style, noting "...so just small modifications, just based on our teaching styles, but nothing that changed the information that we were giving them." However, it is important to note the frequency of data reported in Chapter four with regard to the Fidelity Rationale narrative strand. Within that data strand were several facilitator responses coded as Suggested Deltas. These comments largely centered on small logistical changes the facilitators would make in future iterations of the DPPE curriculum, including specific timelines for the Spring Practicum assignments and processes for selecting teacher participants to take part in the DPPE courses. While the facilitators made few changes to the DPPE curriculum in the context of this study, these comments indicate additional changes in the future, indicating a possible drift in the DPPE curriculum from its original inception.

In sum, the qualitative data provides a context for interpreting the statistically significant increase in Refocusing concerns, as this data indicates specific areas of

curriculum adaptations, the facilitators’ rationale in predominantly maintaining fidelity throughout the implementation effort, and insight into possible future efforts to refocus the DPPE curriculum innovation.

With the interpretation of these five Stages of Concern hypotheses in mind, we turn to an interpretation of the post-hoc analysis of the trends in high and low concerns stages.

Trends in High and Low Stages of Concern

Chapter four displayed a post-hoc analysis, indicating trends in the facilitators’ highest, second highest, and lowest stage(s) of concern. Table 5.4 is a representation of the same data reported in Chapter four, reported here for the purpose of interpreting these trends in stages of concern prior to and immediately following the DPPE implementation effort. It is important to note that these interpretations occur according to trends across Stages 0 – Awareness, 5 – Collaboration, and 6- Refocusing, independent of the time of assessment.

Table 5.4 – Pre-/Post-implementation High and Low Stages of Concern

Facilitators	Pre-Impl. Highest SoC Stage	Pre-Impl. Second Highest SoC Stage	Pre-Impl. Lowest SoC Stage	Post-Impl. Highest SoC Stage	Post-Impl. Second Highest SoC Stage	Post-Impl. Lowest SoC Stage(s)
Teresa	0	5	6	5	0	4
Wendy	5	0	6	5	0	6
Susan	5	3	6	5	0	4,6
Mary	3	0	6	4	5	2,1

A peak score at Stage 0 – Awareness is the only peak score scenario with two contrasting interpretations, depending upon whether the person is a user or non-user of

the innovation. For non-users, high Awareness concerns indicate that they are aware of and concerned about the innovation. However, for users of an innovation like Teresa, Wendy, Mary, and Susan, high Awareness scores suggest a lack of concern about the innovation. Instead, users of an innovation with high Awareness concerns tend to have additional responsibilities beyond the scope of the innovation that are of greater concern. For example, Item 21 of the SoCQ is associated with Stage 0 – Awareness concerns. It states “I am completely occupied with other things.” Respondents who rate this statement highly on the Likert scale of 0-7 are reporting that outside influences are of greater concern, thereby raising their overall Awareness stage score (Hall, George, & Rutherford, 1979).

All four facilitators express high Stage 0 – Awareness concerns at either the pre- or post-implementation assessment. As a result, it is important to consider demographic information in interpreting this trend in Awareness concerns. Both Teresa and Wendy serve the RSS through their critical roles as the Director of Instructional Services and as the Language Arts Curriculum Specialist, respectively. Similarly, Susan assumed a new role as a RSS Lead Teacher close to the beginning of the DPPE implementation effort. Mary’s responsibilities extend beyond her teaching in a nearby high school to her role as a women’s soccer coach and as the mother of a newborn. While these personal and professional roles do not solely define them, they are significant considerations beyond the DPPE curriculum innovation, indicating possible outside influences of greater concern that help explain the trend of Stage 0 – Awareness concerns.

In addition to Stage 0 – Awareness concerns, the facilitators’ trends in concerns also indicate a predominance of Stage 5 – Collaboration concerns. Individuals who

express high Collaboration concerns are indicating that they desire to cooperate with others in a coordinated effort towards employing an innovation. SoCQ item #10 exemplifies this type of Collaboration concern, as respondents rate themselves on the statement “I would like to coordinate my effort with others to maximize the innovation’s effects.” As is the case with the facilitators, a high 0-7 Likert scale rating by a respondent on items such as this one result in high Collaboration concerns levels. The qualitative data reported in Chapter four indicates a high frequency of facilitator comments related to Collaboration concerns. In addition to those facilitator comments previously documented, the facilitators also verbally addressed collaborating with regard to grading expectations, the assessment process, working together across assigned participant groups, and the focus on supporting and introducing appropriate challenges to each other as the semesters progressed.

In addition to emphasizing the facilitators’ highest and second highest stages of concern, Table 5.4 also reports their lowest stage(s) of concern during the DPPE implementation process. A pattern is evident, as Stage 6 – Refocusing concerns are marked across the implementation assessments. Refocusing concerns center on changes or alternative approaches to the proposed or existing form of the innovation in question (Hall, George, & Rutherford, 1979). A low rating on the 0-7 Likert scale regarding items like #20 “I would like to revise the innovation’s instructional approach” result in overall low Stage 6 – Refocusing concerns stage scores. Consequently, one may interpret from these low Refocusing concerns stage scores that the four DPPE facilitators were least concerned about introducing changes or alternatives to the DPPE curriculum as they looked toward the beginning of the implementation process.

Table 5.4 displays trends in the highest, second highest, and lowest stages of concern across the implementation effort. While there are also notable outliers, as exemplified by Mary's post-implementation high Stage 4 – Consequence concerns, it is important to focus on these general trends across the pre- and post-implementation assessments. It is these trends that guide interpretations of some of the incongruent data noted in the earlier Stages of Concern hypotheses. Importantly, the dominant presence of low Stage 6 – Refocusing concerns is a trend in concern that informs the overall interpretation of the degree of fidelity employed during the DPPE implementation effort.

In light of the interpretations of the FIAS, DPPE fidelity instrument, and SoCQ data, we now turn to a discussion of the implications of these interpretations for Borko's conceptual framework, the aforementioned cognitive-developmental assumptions, and for this research endeavor.

Implications

In her 2004 presidential address at the annual meeting of the American Educational Research Association, Hilda Borko outlined three different research phases associated with professional development programs. The first phase suggests a focus on two of the four elements of a professional development program, emphasizing the relationship between a professional development curriculum and teacher learners. Chapter two highlighted such research, noting several studies that employed the seven DPPE conditions as a collective independent variable, with teacher dispositional and pedagogical change serving as dependent variables.

Borko's second phase moves beyond the professional development curriculum and the teacher learners to further scrutinize how a single professional development

program is enacted by more than one facilitator. She incorporates all four elements of a professional development program (facilitators, curriculum, teacher learners, and a scholastic context), emphasizing that the primary goal of this second phase is “to determine whether a professional development program can be enacted with integrity in different settings and by different professional development providers” (Borko, 2004, p.10). As noted by Borko, maintaining integrity to a professional development curriculum does not imply an absolutely rigid approach. Instead, she emphasizes Berman and McLaughlin’s (1978) “mutual adaptation” approach to enacting an educational innovation within a scholastic context with site-specific variables and considerations. This investigation is a step forward in the realm of research on teacher professional development programs. Specifically, this research converges with Borko’s conceptual framework, focusing on all four elements of her proposed professional development system. However, this research represents additional research scrutiny beyond Borko’s first phase of a professional development system, beyond past efforts to measure the effectiveness of professional development programs on teacher learners. Borko (2004) notes that her review of literature “did not yield any professional development programs for which there is adequate evidence that they can be enacted with integrity by multiple facilitators...” (p. 10). Of utmost importance, this study represents an investigation of fidelity that was not available to Borko and others in recent reviews of education innovations. Thus, this research differs from Borko’s review of professional development innovations, diverging in a positive fashion by presenting evidence for a gap in teacher professional development research and literature. Significant questions arise as a result of this study’s contribution to the literature on implementing teacher

professional development curricula. Operating from the stance that this study provides evidence that a professional development program can be enacted with integrity, one might inquire about the professional training these facilitators received. Specifically, what guiding frameworks and specific skill sets shaped the training process for the DPPE facilitators? Additionally, if the DPPE facilitators enacted the curriculum with a high degree of overall fidelity, to what degree does their training inform the guidance they give future teacher learners *and* future DPPE facilitators?

In addition to the connection between this research and Borko's conceptual framework, this study was guided by and offers connections to cognitive-developmental theory. The cognitive-developmental framework is grounded in four theoretical assumptions, including: (a) the assumption that knowledge/meaning is constructed by individuals through experience; (b) the recognition of cognitive dissonance and the roles of assimilation and accommodation in the equilibration process; (c) an emphasis on cognitive and skill development over time, as persons' organizing principles, interpretations, and reasoning become more complex, integrated, and principled over time; and (d) the recognition that growth is not automatic, but instead occurs as a result of positive interactions within a supportive, yet progressively challenging environment. Simply stated, the findings of this study converge with the cognitive-developmental assumptions noted above. The first and second assumptions hinge on knowledge construction during complex, disequilibrating new experiences. The SoCQ and focus group data highlight the DPPE facilitators' disequilibration and newly-constructed knowledge claims that occurred as a result of their complex new human helping roles associated with this implementation effort. The third cognitive-developmental

assumption is supported by the findings from the FIAS and DPPE Fidelity Instrument data, as these findings represent more complex and integrated growth in the facilitators' organizing principles, interpretations of DPPE materials and sessions, and reasoning/epistemological assumptions of knowledge and the learning process. Finally, the findings from this study converge with the fourth cognitive-developmental assumption, as the SoCQ, DPPE Fidelity Instrument, and focus group data emphasize gradual growth on the part of the facilitators, with noteworthy internal support systems that provided positive interactions for the facilitators as they advanced through the challenging environment of professional development implementation.

This study also has implications for the DPPE conditions themselves. Recall that the seven DPPE conditions lie at the heart of the curriculum, and are often called upon to support the development of both novice and veteran educators. Resulting data in this study demonstrate the further applicability of the theoretical assumptions and DPPE conditions to facilitators of professional development programs, a move that extends prior applications of the DPPE conditions. When an individual serves as a DPPE facilitator, s/he is also in a complex new human helping role, requiring the responsiveness and respect for context emphasized by the contextualized learning and development condition. In the same fashion as teacher learners, facilitators of professional development programs require opportunities for guided inquiry (self-assessment and reflection), allowing the facilitators opportunities to progress through disequilibrating facilitation experiences and work towards more complex and integrated knowledge construction. Facilitation implies action, suggesting that in connection with the fourth DPPE condition, facilitators of teacher professional development programs

must balance their tandem actions as facilitators and the inquiry (self-assessments and reflections) into their actions during that facilitation process. Like teacher learners, facilitators of professional development programs can only advance in cognition and skill when they have opportunities for spaced, continuous practice within the context of that complex new role. An individual facilitating an intense three-day workshop would not experience the same sustained and integrated growth that a facilitator of a year-long professional development program would encounter and benefit from. Individuals serving in disequilibrating and complex new roles as facilitators cannot act thoughtfully and deliberately without proper amounts of support. Similar to teacher learners working with professional development curricula, novice facilitators need guidance and differentiated supportive structures to guide them through the facilitation process. As facilitator knowledge perturbation decreases, guiding individuals can and should provide mismatches to challenge facilitators of professional development curricula to continue advancing in cognition and skill sets associated with their roles. Finally, operating from the principle that educators are not born or made, but instead develop deliberately over time (Sprinthall & Thies-Sprinthall, 1983), the Reflective Coaching condition is applicable to facilitators of professional development programs. The cognitive and pedagogical skills associated with facilitation roles are not immediately tacit in novice professional development facilitators, but may instead be gradually developed through the deliberate reflective coaching process outlined by Joyce and Showers (1995).

Findings from this study's scrutiny of facilitator concerns extend initial efforts to address teacher concerns (Fuller, 1969), and most importantly demonstrate a link between the facilitators' dominant Collaboration concerns and two specific DPPE

conditions. DPPE facilitation responsibilities represent a complex new role, consequently bestowing upon the facilitators a degree of disequilibrium and concern. The first two DPPE conditions, Contextualized Learning and Development and Complex New Human Helping Role suggest the need for the facilitators to be responsive to each other as they individually and collectively undertake these new roles. This team effort highlights the DPPE condition of Contextualized Learning and Development, as this condition hinges on trust, and includes a recognition of and respect for different professional and personal contexts. Simply put, without a strong foundation and continuous development of trust among the facilitators in this study, the entire implementation effort would have failed. While each individual facilitator was highly-qualified for this implementation effort, there had been no prior collaborative efforts. Thus, the facilitators had to work to construct a team approach to this implementation effort, and had to continuously work to build upon their early relationships. The convergence between Collaborative concerns data and the two DPPE conditions is an extension of the four cognitive-developmental assumptions at the heart of this study, as the disequilibrating concerns in conjunction with supportive, collaborative environments foster cognitive and pedagogical growth for facilitators of teacher professional development curricula.

In addition to this study's impact on the teacher professional development literature base, its connection to the cognitive-developmental assumptions, its link between professional development facilitators and the seven DPPE conditions, and its meld of Concerns theory with DPPE conditions and theoretical assumptions, this study also demonstrates a deliberate multi-method approach devoted solely to the study of

implementation fidelity. In the field of education, implementation fidelity is often looked upon as a side effort, in conjunction with broader studies of adoption characteristics and/or curriculum effects. As noted in Chapter two, past studies that address implementation fidelity include a variety of assessment techniques and methodologies, of which none are currently widely-accepted for the purpose of measuring fidelity (Basch, 1984; Waltz et al., 1993; Dane & Schneider, 1998). This study, however, focuses specifically on implementation fidelity, thus allowing for a concentrated, multi-method approach to this single issue and advancing the methodological approaches employed when studying the implementation of social innovations. Literature on implementation fidelity does not address the use of focus group interviews as a method of discerning facilitators' collective rationale in making decisions regarding fidelity or adaptation of a given curriculum. Most importantly, the broad literature base on implementing innovations does not address the use of the Flanders Interaction Analysis System (FIAS) as a method for discerning the quality of an implementation effort. Dane and Schneider's (1998) call for a method for measuring quality of implementation is thus answered in this study, as the FIAS fits the definition as a "rating(s) of provider effectiveness which assess(es) the extent to which a provider approaches a theoretical ideal in terms of delivering program content" (Dane & Schneider, 1998).

These implications for teacher professional development, the DPPE theoretical assumptions and conditions, the synthesis of Concerns and DPPE theory, and implementation methodological approaches lead us to a short discussion of future research endeavors.

Future Research

This study centers on the implementation fidelity and facilitator concerns associated with the implementation of a deliberate psychological and professional education innovation. The DPPE framework and curriculum serve as a social innovation, as they represent behavior patterns and procedures that effectively advance teacher professional development when replicated with fidelity. The meld of the DPPE and implementation fidelity research strands represent several future research opportunities. They are as follows:

1. To date, this study represents the first attempt to examine the DPPE curriculum as it is facilitated by school system representatives. As this curriculum is diffused to other school systems, additional research scrutiny could and should be given to these new educational contexts, particularly in comparison to the findings from this study regarding Collaboration and Refocusing concerns and fidelity to DPPE core components.
2. This study's multi-method approach extends past research efforts on implementation fidelity and facilitator concerns. The Flanders Interaction Analysis System represents a new and promising method for collecting and defining the quality of DPPE implementation efforts, as it is a useful analytical tool for understanding learner engagement in professional contexts. Future research efforts can hone and extend the use of this particular method in gauging

- implementation fidelity, particularly in relation to small group talk time and facilitator teaching behaviors.
3. Recent meta-analyses of innovation research do not thoroughly address the concept of social innovation implementation nor do they effectively synthesize research on implementation fidelity/adaptation across the predominant fields of psychology, community health, drug/alcohol prevention, or public education. Consequently, a thorough meta-analysis of implementation research across these fields is needed to effectively capture investigations that specifically scrutinize implementation efforts.
 4. Finally, this study measures implementation fidelity and facilitator concerns across a ten-month implementation effort. However, designers of teacher professional development programs intend for their curricula to extend beyond initial implementation efforts to include routine and established practice within school contexts. The RD&D model highlighted in the second chapter notes the routinization phase that ideally takes place after a curriculum has been effectively implemented. To date, no data has been collected with regard to fidelity in this routinization phase. Essentially, researchers are only beginning to understand the relationship between fidelity and the implementation process. We know even less about the degree to which core components “drift” as they become routine curricula within school systems. Consequently, future longitudinal research can begin to address not only fidelity during the process of implementation, but also

the degree of fidelity employed by facilitators as the number of curriculum iterations increases annually.

Conclusion

The DPPE framework and curriculum are designed to transform professional learning and development across the career span of teachers, with a specific focus on advancing dispositional and pedagogical competencies. While increasingly complex disposition and pedagogy are critical considerations for professional educators, they are superseded by school administrators' efforts to retain teachers. In a school system plagued with teacher retention issues, SU and RSS facilitators effectively facilitated the DPPE curriculum during the 2003-2004 year, resulting in a greatly-improved teacher retention rate of 90%. This significant increase in RSS teacher retention should indicate to education policymakers and administrators that there is a research-based curriculum that can help retain teachers while also developing their pedagogical practices and dispositional competencies. The mere presence of a curriculum effective at retaining teachers is not enough, though. In order to affect widespread changes in teacher retention, the effective DPPE innovation must be disseminated beyond university parameters and be implemented within school system contexts. This study initiates inquiry into what happens as the successful DPPE innovation is transferred from a university to a school system context.

One might ask, though, why the researcher focused on the meta-question of implementation fidelity? When facilitated by its university developers, the DPPE innovation has proven effective for supporting and retaining educators as they develop in

pedagogy and disposition. Given the research-based and effective DPPE curriculum innovation, higher fidelity to that innovation's components on the part of school system facilitators should translate to higher teacher retention rates. Until this study, though, researchers had only scrutinized the degree of fidelity school system facilitators might employ when implementing the DPPE innovation through qualitative analysis.

The ultimate goal for educational research is to positively impact educational practice. In order to begin this process, innovative research-based curricula must first be adopted by school systems. However, the adoption process does not automatically imply that educational research has successfully transferred into routine practice. The critical missing link is the implementation process that separates the adoption and routinization phases. Scrutiny of DPPE curriculum fidelity and facilitator concerns sheds light on the "black box" stigma associated with the implementation of social innovations.

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APPENDICES

Appendix A

Mid-Implementation Focus Group Interview Questions DPPE Fidelity Study

1. Any concerns up to this point in the semester that you would like to share?
2. Have there been *additions* to the DPPE curriculum? If so, what specific additions to which units and *why*?
3. Have there been *modifications* to the DPPE curriculum? If so, what specific modifications and *why*?
4. Have there been any surprises to implementing this curriculum?
5. Do you have any needs (are there things you need help on) that SU DPPE developers can meet?

Appendix B

Post-Implementation Focus Group Interview Questions DPPE Fidelity Study

- A. *F.I. Items that stand out*
- B. *CBAM categories (of emphasis)*
- C. *Roles of facilitators during class sessions?*
 - Do the roles change during sessions? Is there a defined leader to whom certain types of questions are addressed (questions on assignments, due dates).
 - Who fields the unknowns or the unexpected? The team? One person?
- D. *Additions to DPPE curriculum? Modifications?*
 - Have there been additions to the DPPE curriculum? Is so, what specific changes to which units, and why?
 - Have there been modifications to the DPPE curriculum? (Specific modifications and justification?)
 - i. (Note the difference between addition and modification. Additions serve as additive components to the curriculum, but don't change any of the original material. Modifications alter the original curriculum)
- E. *Challenges, surprises, critiques of DPPE curriculum?*
 - Have there been any outstanding expected or unexpected challenges or surprises to implementing this curriculum?
 - Are there any constructive critiques of the curriculum that you would like to offer at this point?
- F. *If you could start the implementation process over, would you do anything differently?*
 - Would you have us (the developers) do anything differently?
- G. *Do you feel a sense of ownership with regard to the DPPE curriculum?*
- H. *Was there a "low point" in the implementation effort this year?*
 - How did you address the low point?
 - A "high point"?

- I. *Do you have any current needs (are their things you need help on) that SU DPPE developers can meet?*
- J. *Next steps for the four of you in relation to DPPE?*

Appendix C
Codes for Mid- and Post-Implementation Focus Group Interviews

1. Interactions Patterns	IP	1.0
IP: Indirect Influence	IP-II	1.1
IP: Direct Influence	IP-DI	1.2
IP: Questions	IP-Q	1.3
IP: % Student Engagement	IP-SE	1.4
IP: Lesson Content	IP-LC	1.0
IP: Co-facilitation	IP-COF	1.0
2. Concerns	CON	2.0
CON: Personal	CON-PER	2.5
CON: Management	CON-MGMT	2.6
CON: Consequence	CON-CSQNC	2.7
CON: Collaboration	CON-COLL	2.8
CON: Refocusing	CON-REF	2.9
CON: Curriculum Needs	CON-NEEDS	2.0
CON: Impl. Low point	CON-LOW	2.0
CON: Impl. Highpoint	CON-HIGH	2.0
CON: Information	CON-INF	2.0
CON: Stage Progression	CON-PRO	2.0
3. Implementation Fidelity	IF	3.0
IF: Fidelity Instrument Item	IF-ITEMS	3.10
IF: Curriculum Surprises	IF-SUPR	3.0
IF: Facilitator Roles	IF-ROLES	3.0
IF: Curriculum Critiques	IF-CRITIQ	3.0
IF: Knowledge of Participants	IF-PART	3.0
IF: Feedback	IF-FEED	3.0
IF: Written Inquiry	IF-WI	3.0
IF: Reflective Coaching	IF-RC	3.0
IF: Adult Development Unit	IF-AD	3.0
IF: Technology Use	IF-TECH	3.0
IF: Administrative Support	IF-AS	3.0
IF: Differentiation	IF-DIFF	3.0
IF: Active Listening	IF-AL	3.0
IF: Effective Teaching Behaviors	IF-TEA	3.0
4. Fidelity Rationale	FR	4.0
FR: Curriculum Additions	FR-CURR ADDS	4.11
FR: Curriculum Additions Rationale	FR-CURR ADDS RAT	4.12
FR: Curriculum Modifications	FR-CURR MODS	4.11
FR: Curriculum Modifications Rationale	FR-CURR MODS RAT	4.12
FR: Suggested Deltas	FR-DELT	4.0
FR: Curriculum Allegiance	FR-CA	4.0

Appendix D

Codes for Facilitator Portfolio Document Analysis

1. Interactions Patterns	IP	1.0
IP: Indirect Influence	IP-II	1.1
IP: Direct Influence	IP-DI	1.2
IP: Questions	IP-Q	1.3
IP: % Student Engagement	IP-SE	1.4
IP: Lesson Content	IP-LC	1.0
IP: Co-facilitation	IP-COF	1.0
2. Concerns	CON	2.0
CON: Personal	CON-PER	2.5
CON: Management	CON-MGMT	2.6
CON: Consequence	CON-CSQNC	2.7
CON: Collaboration	CON-COLL	2.8
CON: Refocusing	CON-REF	2.9
CON: Curriculum Needs	CON-NEEDS	2.0
CON: Impl. Low point?	CON-LOW	2.0
CON: Impl. Highpoint	CON-HIGH	2.0
3. Implementation Fidelity	IF	3.0
IF: Fidelity Instrument Item	IF-ITEMS	3.10
IF: Curriculum Surprises	IF-SUPR	3.0
IF: Facilitator Roles	IF-ROLES	3.0
IF: Curriculum Critiques	IF-CRITIQ	3.0
IF: Suggested Changes	IF-SUGG	3.0
IF: Do Differently?	IF-HINDSGHT	3.0
4. Fidelity Rationale	FR	4.0
FR: Curriculum Additions	FR-CURR ADDS	4.11
FR: Curriculum Additions Rationale	FR-CURR ADDS RAT	4.12
FR: Written Inquiry	FR-WI	4.13
FR: Curriculum Modifications	FR-CURR MODS	4.11
FR: Curriculum Modifications Rationale	FR-CURR MODS RAT	4.12

** Adapted from Miles & Huberman, 1994.

Appendix E

FIAS Categories	Rater A Tallies	Rater B Tallies	Percentage Agreement
Accepts Feelings	2	2	100%
Praises or Encourages	79	93	85%
Accepts or Uses Ideas of Student	72	112	64%
Asks Questions	106	106	100%
Lectures	443	443	100%
Gives Directions	57	44	77%
Criticizes or Justifies Authority	0	0	100%
Student Talk-Response	157	173	91%
Student Talk-Initiation	199	183	92%
Silence or Confusion	18	20	90%

Mean % Agreement
89%

Appendix F

Dear Colleague:

Congratulations on the completion of this year's DPPE curriculum! Thank you for your continuing efforts to provide our mentor and beginning teachers with quality professional development opportunities.

As principal investigators for the NC Quest grant (Phase II), several of us at SU have been concentrating our efforts this year on studying the implementation of the DPPE curriculum in RSS. Data has been collected by issuing questionnaires, conducting interviews, leading focus group reflections, and making observations.

This questionnaire seeks to measure the degree of fidelity maintained as the DPPE curriculum has been implemented this past academic year. *Each item in the questionnaire is designed to address either your attitude/disposition towards a particular issue, your level of comfort and confidence, or actions/decisions you have taken during this implementation effort.* We encourage you to answer authentically. There is no correct or incorrect answer. Instead, we simply hope to obtain a final “snapshot” of your thoughts as DPPE facilitators.

We ask that you approach each numbered item by carefully reading the answer choices provided (I, A, U). Each of the numbered items has at least two statements; many items have three statements. Choose the answer choice (by writing either the I, A, or U in the blank space provided) that best represents your disposition, your level of confidence/comfort, or your past actions or decisions as a facilitator. If an item does not apply to you, please write “N/A” in the blank space, and provide a one sentence explanation as to why you selected the N/A response. Please remember to answer each item from your perspective as a DPPE facilitator.

The following is an example of the format for each item in this instrument:

I= Facilitator expresses a “high degree” of comfort with the coaching competencies checklist.

A= Facilitator expresses a “moderate degree” of comfort with the coaching competencies checklist.

U= Facilitator expresses discomfort or no knowledge of the coaching competencies checklist.

Thank you for all of your help this year with the DPPE innovation and the studies of the replication process. We look forward to a continued alliance between RSS and SU.

I = Ideal

A= Acceptable

U= Unacceptable

1. _____
I= School system leaders (superintendent and associate superintendents) are familiar with the DPPE program and communicate importance of recruitment, retention, and quality mentoring to community, principals, teachers, and staff.
A= School system leaders (superintendent and associate superintendents) are familiar with the DPPE program and communicate importance of recruitment, retention, and quality mentoring to principals and teachers.
U= School system leaders (superintendent and associate superintendents) are either not familiar with the DPPE program or do not communicate importance of recruitment, retention, and quality mentoring.
2. _____
I= Principals are knowledgeable of the DPPE program requirements, time frame, basic principles, and benefits to their individual teachers and schools.
A= Principals are knowledgeable of the DPPE program requirements and time frame.
U= Principals are not aware of the DPPE program requirements, time frame, and the effects on their teachers.
3. _____
I= Principals work to “free” teachers from all scholastic responsibilities beyond their teaching assignments while participating in the DPPE program.
A= Principals reduce the number of responsibilities beyond teaching assignments throughout the teacher’s time in the DPPE program.
U= Principals do not work to reduce the number of responsibilities placed upon DPPE participants.
4. _____
I= Principals provide numerous opportunities for teachers to complete cycles of assistance, classroom observations, and demonstration teaching episodes.
A= Principals provide at least two opportunities for teachers to complete cycles of assistance, classroom observations, and demonstration teaching episodes.
U= Principals do not provide any opportunity within the school day for teachers to complete cycles of assistance, classroom observations, and demonstration teaching episodes.
5. _____
I= Facilitators receive a monetary stipend for each semester he/she serves as a facilitator in the DPPE program and the stipend is comparable to honoraria for outside consultants.

A= Facilitators receive a monetary stipend for each semester he/she serves as facilitator in the DPPE program but it is not comparable to honoraria for outside consultants.

U= Facilitator do not receive a monetary stipend for serving as DPPE facilitators.

6. _____ I= County office representatives are willing to financially support both the facilitators and the mentor teachers in the DPPE program upon termination of the NC Quest grant.

A= County office representatives are willing to financially support the DPPE facilitators upon termination of the NC Quest grant.

U= County office representatives are no longer willing to financially support the DPPE program upon termination of the NC Quest grant.

7. _____ I= The DPPE program is fully incorporated into the county's future operating plan; staff expectations and all needed resources are provided.

A= All DPPE program resources are provided.

U= The DPPE program is not incorporated into the county's future operating plan and required resources are not provided.

8. _____ I= Facilitators judge themselves as "highly knowledgeable" with regards to the Integrated Learning Framework as an applied theory to guide DPPE curriculum, participants' needs, and instructional and evaluation procedures.

A= Facilitators judge themselves as "knowledgeable" with regards to the Integrated Learning Framework as an applied theory to guide DPPE curriculum, participants' needs, instructional and evaluation procedures.

U= Facilitators judge themselves as lacking understanding with regards to the Integrated Learning Framework as an applied theory to guide DPPE curriculum, participants' needs, instructional and evaluation procedures.

9. _____ I= Program sessions include lots of interaction and interplay between facilitators and participants.

A= Program sessions include some interaction and interplay between facilitators and participants.

U= Program sessions do not include interaction and interplay between facilitators and participants.

10. _____ I= The Integrated Learning Framework (ILF) is introduced to program participants orally and in writing during the first program session.

A= The ILF is introduced to program participants in writing during the first program session.

U= The ILF is not introduced to program participants during the first program session.

11. _____ I = Facilitators judge themselves as "highly knowledgeable" with regards to

reflective coaching as a process to support participant acquisition of new teaching and mentoring skills.

U= Facilitators judge themselves as lacking understanding with regards to the reflective coaching as a process to support participant acquisition of new teaching and mentoring skills.

12. _____ I= Facilitators demonstrate a deep, tacit knowledge of the DPPE curriculum through their leadership efforts.
A= Facilitators demonstrate a thorough understanding of the DPPE curriculum through their leadership efforts.
U= Facilitators demonstrate a partial understanding of the DPPE curriculum.
13. _____ I= Facilitators cover all material in the units of study: Building relationships, Effective teaching, Effective coaching, Adult development, Practicum. Each participant is given a brief, general overview before the first unit begins.
A= Facilitators cover most material in the units of study of sequenced from: Building relationships, Effective teaching, Effective coaching, Adult development, Practicum.
U= Significant portions from lessons and units of study are not presented in the proper sequence or are missing from the curriculum altogether.
14. _____ I= For each assignment, facilitators provide written feedback that is matched to the needs of the adult learner.
A= For 80% of assignments, written feedback is provided to each participant which is matched to the needs of the adult learner.
U= Written and verbal feedback are given inconsistently or not at all throughout the assignments and units of study.
15. _____ I= Facilitators rate themselves as “very familiar” with content of each unit of study, the accompanying theory, and teacher self-assessment instruments.
A= Facilitators rates themselves as “familiar” with the content each unit of study, the accompanying theory, and teacher self-assessment instruments.
U= Facilitators rate themselves as “unsure” or “questionable” with content of any unit of study, the accompanying theory, and teacher self-assessment instruments.
16. _____ I= Facilitators regularly model all seven effective teaching competencies through their instruction of program sessions.
A= Facilitators regularly model at least four effective teaching competencies through their instruction of program sessions.
U= Facilitators model fewer than four effective teaching competencies through their instruction of program sessions.
17. _____ I= Facilitators demonstrate the construction and use of a coaching plan

in oral and written form for program participants.

A= Facilitators demonstrate the construction and use of a coaching plan orally for program participants.

U= Facilitators fail to demonstrate the construction and use of a coaching plan for program participants.

18. _____ I= Facilitators frequently ask open-ended questions that prompt deeper reflection and analysis in both oral and written form.
A= Facilitators regularly ask open-ended questions that prompt deeper reflection and analysis in written form.
U= Facilitators do not ask open-ended questions that prompt deeper reflection and analysis or do so infrequently.
19. _____ I= Facilitators rate themselves “very proficient” in the ability to paraphrase thoughts and feelings of participants.
A= Facilitators rate themselves “proficient” in the ability to paraphrase thoughts of participants.
U= Facilitators rate themselves as “lacking competence” in the ability to paraphrase thoughts or feelings of participants.
20. _____ I= Facilitators rate themselves as “very competent” in the ability to use all parts of pre- and post-conferences, including varying the amount of direct/indirect questions and inviting ample colleague/novice talk (at least 50-60%).
A= Facilitators rate themselves as “competent” in the ability to use all parts of pre- and post-conferences, including varying the amount of direct/indirect questions and inviting ample colleague/novice talk (at least 30-49%).
U= Facilitators rate themselves as “unable” or “lacking competence” in using all parts of pre- and post-conferences, including varying the amount of direct/indirect questions and inviting ample colleague/novice talk (less than 30%).
21. _____ I= Facilitators rate themselves as “highly effective” at utilizing guided written reflection techniques, demonstrating the ability to differentiate for participants’ conceptual levels.
A= Facilitators rates themselves as “effective” at utilizing guided written reflection techniques, demonstrating little differentiation for participants’ conceptual levels.
U= Facilitators rates themselves as “ineffective” at utilizing guided written reflection techniques in their interactions with program participants.
22. _____ I= Facilitators work effectively and collectively at delineating session responsibilities.
A= Facilitators work effectively at implementing delineated session responsibilities with some attention to shared responsibility.
U= Facilitators do not work effectively at delineating session responsibilities,

resulting in an abundance of responsibility for one facilitator and fewer tasks for other facilitators.

23. _____ I= Facilitators rate the degree of session planning and collaboration as “very effective.”
A= Facilitators rate the degree of session planning and collaboration as “effective.”
U= Facilitators rate the degree of session planning and collaboration as “ineffective” or “insufficient.”
24. _____ I= There is frequent facilitator reflection/analysis regarding the learning and conceptual development of participants
A= Regular group facilitator reflection/analysis occurs regarding the learning and conceptual development of participants
U= Infrequent or no group facilitator/reflection occurs regarding the learning and conceptual development of participants
25. _____ I= Facilitators rate the degree of collaboration and cooperation with other facilitators on program sessions as “extensive.”
A= Facilitators rate the degree of collaboration and cooperation with other facilitators on program sessions as “sufficient.”
U= Facilitators rate the degree of collaboration and cooperation with other facilitators on program sessions as “insufficient” or “lacking.”
26. _____ I= All curriculum materials (syllabi, CDs, etc.) are prepared for immediate distribution during the first program session.
A= Most curriculum materials (syllabi, CDs, etc.) are prepared for immediate distribution during the first program session.
U= Few curriculum materials (syllabi, CDs, etc.) are prepared for immediate distribution during the first program session.
27. _____ I= Facilitators rate themselves as “very proficient” in active listening exercises and consistently practice active listening during program sessions when participants share concerns and during course discussions.
A= Facilitators rates themselves as “proficient” in active listening exercises and occasionally use active listening during program sessions, particularly when participants share concerns .
U= Facilitators rate themselves as “unfamiliar” or “lacking confidence” in active listening exercises and do not practice active listening during program sessions.
28. _____ I= Expectations for participant portfolios are established through both written and verbal mediums at the beginning of the semester.
A= Expectations for participant portfolios are established in writing at the beginning of the semester.
U= Expectations for participant portfolios are not established in written and

verbal mediums or are vague and unclear.

29. _____ I= Assignments for program participants are clearly communicated orally and in writing at the beginning of the semester and time is given to accommodate participant questions regarding assignments.
A= Assignments for program participants are communicated in writing at the beginning of the semester.
U= Assignments for program participants are not communicated in writing at the beginning of the semester or are vague and unclear.
30. _____ I= Facilitators collect samples of mentor/beginning teacher work every session to assess levels of understanding and provide substantive written feedback.
A= Facilitators collect samples of mentor/beginning teacher work every session to assess levels of understanding and provide some written feedback.
U= Facilitators do not regularly collect samples of mentor/beginning teacher work.
31. _____ I= Self-assessment opportunities are scaffolded, allowing participants adequate time for practice and reflection between assessment exercises.
U= Self-assessment occurs in the form of a massed, singular self-assessment opportunity at the end of the semester.
32. _____ I= Facilitators habitually model proper guided reflection techniques (differentiated and graduated coaching) in their written and verbal responses to participants.
A= Facilitators regularly model proper guided reflection techniques (differentiated and graduated coaching) in their written and verbal responses to participants.
U= Facilitators infrequently or ineffectively model proper guided reflection techniques (differentiated and graduated coaching) in their written and verbal responses to participants.
33. _____ I= Facilitators frequently self-assess their written responses to program participants, noting quality of reflective coaching.
A= Facilitators self-assess their written responses to program participants at least twice per semester, noting quality of reflective coaching.
U= Facilitators do not self-assess their written responses to program participants.
34. _____ I= Facilitators conduct “getting acquainted” conferences with each participant within three weeks of the beginning of the semester.
A= Facilitators conduct “getting acquainted” conferences with each participant before the mid-point of the semester.
U= Facilitators do not conduct “getting acquainted” conferences with each

participant.

35. _____ I= Open and effective channels of verbal and written communication are maintained between facilitator and participant.
A= Open and effective channels of written communication are maintained between facilitator and participant.
U= Open channels of communication (either verbal or written) are never established or are ineffective.
36. _____ I= Technology used in conjunction with the DPPE program is introduced before the first curriculum session of each semester.
A= Technology used in conjunction with the DPPE program is introduced to participants within the first two curriculum sessions of each semester.
U= Technology used in conjunction with the DPPE program is not introduced until mid-semester.
37. _____ I= Facilitators and technology specialists recognize the need and provide technological assistance for DPPE participants in the form of additional “help” sessions.
A= Facilitators and technology specialists provide technology assistance for DPPE participants upon request.
U= Facilitators and technology specialists do not provide technology assistance for DPPE participants.
38. _____ I = Facilitators are very knowledgeable in the installation, use, and teaching of web camera technology.
A= Facilitators are knowledgeable in installation and use of web camera technology.
U= Facilitators lack knowledge in use of web camera technology.
39. _____ I= Facilitators are very knowledgeable in archiving instructional or mentoring sessions into DVD format and are fully confident in their ability to instruct others in the process.
A= Facilitators are knowledgeable in archiving instructional or mentoring sessions into DVD format and are somewhat confident in their ability to instruct others in the process.
U= Facilitators lack knowledge in archiving instructional or mentoring sessions into DVD format and lack the ability to instruct others in the process.
40. _____ I= Program participant target population comprised of beginning, lateral-entry, and mentor candidate teachers.
U= Program participant target population is not comprised of beginning, lateral-entry, and mentor candidate teachers.

41. _____ I = Exact number and names of participants is documented by county office and DPPE facilitators before program begins.
 A = Approximate number of participants in DPPE accounted for by DPPE facilitators before program begins.
 U = Number of DPPE participants unknown by DPPE facilitators.
42. _____ I = Number of participant dyads (pairs) is between 8-12.
 U = Number of participant dyads is fewer than 4 or greater than 12.
43. _____ I = Educational background of each participant known, considered, and documented by DPPE facilitators
 A = Some knowledge of educational background of participants known and considered by DPPE facilitators.
 U = Educational background of program participants unknown.
44. _____ I = Participants given opportunity to request consideration of physical needs prior to initial program introductory meeting.
 A = Participants given opportunity to request consideration of physical needs at time of initial program introductory meeting.
 U = Participants not given opportunity to request consideration of physical needs.
45. _____ I = School locations of each participant considered in reference to central meeting location and time of each session.
 A = School locations of most participants considered in reference to central meeting location and time of each session.
 U = School locations of participants not considered in reference to central meeting location and time of each session.
46. _____ I = Teaching assignments of each participant known prior to initial program introductory meeting.
 A = Teaching assignments of each participant acquired during initial program introductory meeting.
 U = Teaching assignments of each participant not acquired until later in semester or not acquired at all.
47. _____ I = Participants volunteered to take part in DPPE program.
 A = Participants approached by facilitators/administrators and encouraged to take part in DPPE program.
 U = Participants are strongly encouraged or mandated by administrators to take part in DPPE program.
48. _____ I = Participants have no extracurricular responsibilities at their individual schools.
 A = Participants have minimal extracurricular responsibilities.
 U = Participants have significant, limiting extracurricular responsibilities.

49. _____ I= Each weekly program session is conducted in a 2 ½ to 3 hour period and assignments are utilized as described in the DPPE program.
 A= Each weekly program session is conducted in a 1 ½ to 2 ½ hour period and 80% of assignments are included.
 U= Each weekly program session is less than a 1 ½ hour or more than a 3 hour period and less than 80% of assignments are utilized with participants.
50. _____ I= Participant grades will be assessed based on the completion of weekly assignments, cycles of assistance, a professional portfolio and active participation with dyad partner and program colleagues.
 A= Participant grades will be assessed based on the completion of weekly assignments, cycles of assistance, and a professional portfolio.
 U= Participant grades will be assessed based on weekly assignments and participation.
51. _____ I= Facilitators volunteer to serve as lead teachers in the DPPE program.
 A= Facilitators are encouraged to serve as lead teachers in the DPPE program.
 U= Facilitators are mandated to serve as lead teachers in the DPPE program.
52. _____ I= Facilitators request observation by the DPPE program designers and are open to constructive feedback.
 A= Facilitators are open to observation by other DPPE facilitators and are open to constructive feedback.
 U= Facilitators are hesitant to session observations and/or constructive feedback.
53. _____ I= Facilitators thoroughly document problems in program implementation as they arise.
 U= Facilitators do not document problems in program implementation as they arise OR they document problems holistically at the end of each semester.
54. _____ I= Facilitators “read and flex” to the participants and make adjustments according to participant level of engagement.
 A= Facilitators “read and flex” to the participants and make some adjustments according to participant level of engagement.
 U= Facilitators do not “read and flex” to the participants and/or are unwilling to make curriculum adjustments according to participant level of engagement.
55. _____ I= Facilitators judge themselves as “highly reflective” with regards to the DPPE curriculum, participants’ needs, instructional and evaluation procedures.

A= Facilitators judge themselves as “reflective” with regards to the DPPE curriculum, participants’ needs, instructional and evaluation procedures.

U= Facilitators judge themselves as being “somewhat reflective” with regards to the DPPE curriculum, participants’ needs, instructional and evaluation procedures.

56. _____ I= Facilitators demonstrate a strong belief in the potential benefits of the DPPE program for teacher and student learning.

A= Facilitators demonstrate a moderate belief in the potential benefits of the DPPE program for teacher and student learning.

U= Facilitators demonstrate an uncertain belief in the potential benefits of the DPPE program for teacher and student learning.

57. _____ I= Facilitators model effective teaching practices in every program session.

A= Facilitators model effective teaching practices in most program sessions.

U= Facilitators model effective teaching practices in few program sessions or not at all.

58. _____ I= Facilitators invite all participants to discuss experiences and questions with other participants in 90% of sessions.

A= Facilitators invite most of participants to share experiences and questions with other program colleagues in 70-89%.

U= Facilitators provide few invitational opportunities for participants to share experiences and questions with other program colleagues.

Appendix G

SoCQ SUCCEED RSS

Name (optional) _____

In order to identify these data, please list the last four digits of your Social Security number:

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the innovation adoption process. The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years experience in using them. Therefore, items on this questionnaire may appear to be of little relevance or irrelevant to you at this time. For the completely irrelevant items, please circle “0” on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

- | | |
|---|-----------------|
| This statement is very true of me at this time. | 0 1 2 3 4 5 6 7 |
| This statement is somewhat true of me now. | 0 1 2 3 4 5 6 7 |
| This statement is not at all true of me at this time. | 0 1 2 3 4 5 6 7 |
| This statement seems irrelevant to me. | 0 1 2 3 4 5 6 7 |

Please respond to the items in terms of your present concerns, or how you feel about your involvement or potential involvement with SUCCEED. We do not hold to any one definition of this innovation, so please think of it in terms of your own perception of what it involves. Since this questionnaire is used for a variety of innovations, the name SUCCEED never appears. However, phrases such as “the innovation,” “this approach,” and “the new system” all refer to SUCCEED. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with SUCCEED.

Thank you for taking time to complete this task.

SoC Questionnaire Items

1. I am concerned about students' attitudes toward this innovation. 0 1 2 3 4 5 6 7
2. I now know of some other approaches that might work better. 0 1 2 3 4 5 6 7
3. I don't even know what the innovation is. 0 1 2 3 4 5 6 7
4. I am concerned about not having enough time to organize myself each day. 0 1 2 3 4 5 6 7
5. I would like to help other faculty in their use of the innovation. 0 1 2 3 4 5 6 7
6. I have a very limited knowledge about the innovation. 0 1 2 3 4 5 6 7
7. I would like to know the effect of reorganization on my professional status. 0 1 2 3 4 5 6 7
8. I am concerned about a conflict between my interests and my responsibilities. 0 1 2 3 4 5 6 7
9. I am concerned about revising my use of the innovation. 0 1 2 3 4 5 6 7
10. I would like to develop working relationships with both our faculty and outside faculty using this innovation. 0 1 2 3 4 5 6 7
11. I am concerned about how the innovation affects students. 0 1 2 3 4 5 6 7
12. I am not concerned about his innovation. 0 1 2 3 4 5 6 7
13. I would like to know who will make the decisions in the new system. 0 1 2 3 4 5 6 7
14. I would like to discuss the possibility of using the innovation. 0 1 2 3 4 5 6 7
15. I would like to know what resources are available if we decide to adopt this innovation. 0 1 2 3 4 5 6 7
16. I am concerned about my inability to manage all the innovation requires. 0 1 2 3 4 5 6 7
17. I would like to know how my teaching or administration is supposed to change. 0 1 2 3 4 5 6 7
18. I would like to familiarize other departments or persons with the progress of this new approach. 0 1 2 3 4 5 6 7
19. I am concerned about evaluating my impact on students. 0 1 2 3 4 5 6 7
20. I would like to revise the innovation's instructional approach. 0 1 2 3 4 5 6 7
21. I am completely occupied with other things. 0 1 2 3 4 5 6 7
22. I would like to modify our use of the innovation based on the experiences of our students. 0 1 2 3 4 5 6 7

23. Although I don't know about this innovation, I am concerned about things in the area. 0 1 2 3 4 5 6 7
24. I would like to excite my students about their part in this approach. 0 1 2 3 4 5 6 7
25. I am concerned about time spent working with nonacademic problems related to this innovation. 0 1 2 3 4 5 6 7
26. I would like to know what the use of the innovation will require in the immediate future. 0 1 2 3 4 5 6 7
27. I would like to coordinate my effort with others to maximize the innovation's effects. 0 1 2 3 4 5 6 7
28. I would like to have more information on time and energy commitments required by this innovation. 0 1 2 3 4 5 6 7
29. I would like to know what other faculty are doing in this area. 0 1 2 3 4 5 6 7
30. At this time, I am not interested in learning about his innovation. 0 1 2 3 4 5 6 7
31. I would like to determine how to supplement, enhance, or replace the innovation. 0 1 2 3 4 5 6 7
32. I would like to use feedback from students to change the program. 0 1 2 3 4 5 6 7
33. I would like to know how my role will change when I am using the innovation. 0 1 2 3 4 5 6 7
34. Coordination of tasks and people is taking too much of my time. 0 1 2 3 4 5 6 7
35. I would like to know how this innovation is better than what we have now. 0 1 2 3 4 5 6 7