EVALUATION OF TRAINING FOR BUILDING-BASED DATA MANAGERS WITHIN A SCIENTIFICALLY-BASED READING RESEARCH PROGRAM

DISSERTATION

Presented in Partial Fulfillment of the Requirements for

The Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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* * * * *

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ABSTRACT

The Ohio Department of Education received funding in 2003 from the U.S. Department of Education for Reading First-Ohio, a scientifically-based reading research program aimed at improving reading instruction in kindergarten through third grade for students in the lowest performing, highest poverty school districts within Ohio. Within the approved application, Ohio designated three positions to be filled in each building: a literacy specialist, a resource coordinator and a data manager. The Ohio Department of Education developed training for building-based data managers.

This study seeks to evaluate the effectiveness of the training developed for the twenty-nine data managers within this program in Year 1, Cohort 1. Using a six-stage human resource development evaluation model developed by Robert Brinkerhoff, this study examines indicators of effectiveness at each of the six stages within the model. Session evaluations, knowledge assessments and performance assessments were developed to assess training as it occurred. To assess how training participants used the knowledge and skills acquired in training on the job, field checklists were developed and utilized. Correlations were performed to determine the strength of the relationships between the knowledge assessments, performance
assessments and field checklists. Additionally, interviews were conducted with data managers in order to gain insight and understanding into their experience and the training they received during this first year.

Finally, a data access and use questionnaire was developed and administered to data managers, principals, literacy specialists and resource coordinators in funded buildings to assess the organizational impact of training. One hundred and fifty two responses were gathered. The number of buildings which the data manager served was considered as a factor when assessing organizational effectiveness. An Analysis of Variance was conducted to determine whether significant differences existed between these groups (number of buildings served) and roles. Only one significant difference was determined by role, and that existed between principals and literacy specialists. The number of buildings served by the data manager was not a significant factor. The results of the evaluation are discussed as well as the implications for future training, research and evaluation within this program as districts transition from funded to non-funded status.
Dedicated to my Parents
I would like to express my sincere appreciation to my adviser, Dr. Brad Mitchell. His patience, understanding and encouragement was invaluable as I completed my dissertation. I would also like to thank the other members of my dissertation committee: Dr. Jerry Zutell for his advice, insight, and motivation; Dr. Franklin Walter for his wise words and support; and Dr. Jeffrey Ford, for his perspective and thoughtfulness about my work.

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Brinkerhoff’s Six Stage Evaluation Model
CHAPTER 1

INTRODUCTION

The “No Child Left Behind Act of 2001” is the reauthorization of the Elementary and Secondary Education Act, first passed in 1965 during the administration of President Lyndon B. Johnson. The 1965 Elementary and Secondary Education Act was a reflection of the social change taking place in the country at that time and was part of President Johnson’s “War on Poverty.” The legislation was the first and largest comprehensive federal act which sought to provide substantial aid for kindergarten through twelfth grade education. The act was reauthorized in 1970 and has been reauthorized every five years since that time. With each reauthorization, changes and priorities have shifted, however, the basic goal of the legislation, which is to provide aid and resources to ensure that students who come from economically or culturally disadvantaged backgrounds have access to a quality public educational experience, remains firm. The “No Child Left Behind Act of 2001” (NCLB) differs from previous reauthorizations in four basic ways: increased accountability, increased flexibility and local control of funds, expanded options for parents and a stronger emphasis on effective teaching methods. The NCLB is complex, dense legislation. One of the most visible pieces of NCLB is the requirement that all
students in third through eight grades be tested annually in reading and math on content standards the state has developed. Science must be tested once in particular grade bands (3-5, 6-9, 10-12). States must designate which tests will be used for this purpose and results must be communicated to parents annually. All state tests in reading and math must be developed by 2005-2006 and science by 2007-2008. By allowing states to develop their own state assessments, there is inherent unevenness established when comparing the achievement of students in various states. To combat this, states are required to participate in National Assessment of Educational Progress (NAEP) testing at fourth and eighth grades. To date, this Act reflects one of the greatest examples of federal involvement in public education.

The NCLB Act contains two major literacy initiatives—Early Reading First and Reading First. Both are based upon the use of scientifically-based reading research tools, materials, strategies and assessments. Scientifically based reading research is defined in legislation as

“The term scientifically based reading research a) means the application of rigorous, systematic and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and b) shall include research that (i) employs systematic, empirical methods that draw on observation or experiment, (ii) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn, (iii) relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations, and (iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective and scientific review” (ESEA, Title IX, Part A, Section 9101 (37)).

The goal of Early Reading First is to support local efforts to enhance the early language and pre-reading skills of preschool age children through strategies and
professional development, both based on scientifically-based reading research. The goal of this funding stream is not about developing new early childhood programs, but about improving existing preschool programs such as Head Start, preschool, and preschool special education programs. The funds are to be used to establish and enhance literate environments within existing programs for preschool children, including using valid and reliable screening instruments to identify students who are potentially at risk for experiencing reading failure at a later age. $75 million was available for FY 2002 to fund Early Reading First efforts.

The second major literacy initiative contained within NCLB is Reading First, which is aimed at improving classroom reading instruction in kindergarten through third grade. The legislation establishing this program defines reading as

“a complex system of deriving meaning from print that requires all of the following: (a) The skills and knowledge to understand how phonemes, or speech sounds, are connected to print; (b) The ability to decode unfamiliar words; (c) The ability to read fluently; (d) Sufficient background information and vocabulary to foster reading comprehension; (e) The development of appropriate active strategies to construct meaning from print; and (f) The development and maintenance of a motivation to read (National Institute for Literacy, 2002).

In FY 2002, $900 million was available for funding of Reading First, making this the third highest federally funded program behind only special education and Title I. Reading First must serve the highest poverty, lowest achieving districts in the state.
BACKGROUND

Ohio received funding for Reading First in January, 2003. Year 1 funding was $27 million and Year 2 funding is $31 million (Ohio Department of Education, 2003). The overarching goal of Reading First-Ohio is for all children to read at or beyond grade level by the end of the third grade as defined by Ohio’s K-3 English Language Arts Standards, Benchmarks, and Grade Level Indicators. Additionally, Reading First-Ohio identifies three program standards of effective scientifically-based research classroom reading instruction for all children in kindergarten through third grade. Reading First-Ohio utilizes a reliable, valid assessment system which is standardized across all funded districts. Assessment data is used to inform daily reading instruction in the classroom. The program targets eligible districts and schools with the highest rates of poverty in the state and the lowest levels of achievement at the primary grade levels. In Ohio, there is a target pool of twenty seven districts who meet eligibility criteria. Finally, Reading First-Ohio supports districts within the broader context of statewide professional development and technical assistance systems.

Eligible districts elect to apply for funding through Reading First-Ohio. Grants are awarded for three years, provided that the district and schools can demonstrate student progress in reading, including progress of disaggregated subgroups of students (race, disadvantaged student status, English language learners and special education students). If a district or building fails to meet progress, funding will not continue after Year 2. All funded districts must employ a district
 coordinator who is dedicated to Reading First-Ohio at least half-time (.5 full time equivalent). All buildings must be served by a full-time literacy specialist (1.0 full time equivalent), a quarter-time resource coordinator (.25 full time equivalent) and at minimum a quarter-time (.25 full time equivalent) data manager. The literacy specialist is responsible for providing professional development opportunities to building instructional staff and for coaching classroom teachers in order to improve the effectiveness of classroom instruction. The resource coordinator is responsible for aligning all existing resources within the building to support the classroom reading instruction and for ensuring that all resources are reflective of scientifically-based reading research. The resource coordinator also evaluates resources being examined for purchase to ensure they are aligned with the existing core reading program and are reflective of scientifically based reading research. The building data manager is responsible for collecting assessment data, ensuring the accuracy of the data, reporting the data to the Ohio Department of Education and for supporting building staff in the effective use of the data to inform instruction.

The student assessment system embedded in Reading First-Ohio utilizes student assessment for four purposes: screening, diagnosis, monitoring of progress and to measure outcomes. The purpose of the screening assessment is to identify students who are at-risk for experiencing reading difficulty. The Texas Primary Reading Inventory (TPRI) is used for screening purposes at kindergarten, first and second grades. At third grade, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) is used for screening. Screening assessments are administered in late-September/early October of each year. Diagnostic assessment is designed to give
specific information to a classroom teacher about a student’s strengths and weaknesses. This information can then be used to inform instruction for each student. For diagnostic purposes, the Texas Primary Reading Inventory is used at all four grade levels. Diagnostic assessment can be used throughout the year. Student progress is monitored three times during the school year (November, February and April). The DIBELS is used for the purpose of monitoring student progress at all four grade levels. The outcome measure used in Reading First-Ohio is the TerraNova I Multiple Assessment/Reading. This assessment is administered at first, second and third grades in May and is used to determine achievement levels of students in the Reading First-Ohio program. Data is collected for the screening, progress monitoring (3) and outcome assessments. Diagnostic data is not collected and is used solely to inform instruction.

The assessments used in Reading First-Ohio form an assessment system, administered over the course of the school year. In kindergarten, the areas that are assessed are listening comprehension, book and print awareness, phonemic awareness, graphophonemic knowledge (TPRI); letter name fluency, phonemic awareness (initial sound fluency and phoneme segmentation fluency), phonics (nonsense word fluency), (DIBELS). In first grade, the areas assessed are reading comprehension, book and print awareness, phonemic awareness, graphophonemic knowledge (TPRI); letter name fluency, phonemic awareness (phoneme segmentation fluency), phonics (nonsense word fluency) and oral reading fluency (DIBELS); reading comprehension, vocabulary and word analysis (TerraNova). In second grade, the areas assessed are reading comprehension, graphophonemic knowledge (TPRI);
phonics (nonsense word fluency), oral reading fluency (DIBELS); reading comprehension, vocabulary and word analysis (TerraNova). In third grade, the areas assessed are oral reading fluency (DIBELS), reading comprehension, vocabulary and word analysis (TerraNova).

The TPRI and DIBELS are individually administered assessments. A data collection procedure and system was constructed to collect the data for analysis from these assessments. The TerraNova is a norm-referenced test which is scored by CTB McGraw-Hill.

For the TPRI and the DIBELS, the building based data managers collect and enter the data onto a spreadsheet. This spreadsheet has been developed by the State Software Development Team (SSDT) at the Northwest Ohio Computing Association (NWOCA) according to the specifications established by the Office of Literacy, Ohio Department of Education. The spreadsheet contains each child’s name, local Educational Management Information System (EMIS) number, name of the assessment and benchmark period (for progress monitoring), the title of the assessor (classroom teacher, literacy specialist, psychologist, other), the days of instruction which occurred from the beginning of the school year or date of student entry into the school to the date of assessment, and the total score for each subtest. This spreadsheet, once completed by the data managers, is sent to the district EMIS coordinator.

The district EMIS coordinator possesses a crosswalk from the local EMIS number for each student to the State Student Identifying Number (SSID). The 2003-2004 school year is the first year for the use of the SSID. This number is a unique
identifying number, assigned to each student in the state of Ohio. It is illegal for state officials to see data with identifiable student data attached (names, local EMIS numbers) and it is illegal for the SSID to be shared by the EMIS coordinator with anyone at the district level. The information collected at the building level by the Reading First-Ohio data manager is then transformed with the SSID number attached at the district EMIS coordinator level at the district level. The data is then sent to the appropriate data acquisition sites (DA sites). These DA sites, which are regional, run the data through verification procedures and return it to the districts for corrections, if necessary. When data files arrive at the Ohio Department of Education, the assessment scores and the student demographic data come with the SSID attached.

Data must be reported to the United States Department of Education by the Ohio Department of Education annually. Group data must be reported by district, building, and grade level. Student level data must be disaggregated by gender, race, disadvantaged student status, special education status and English language learner status. Because continued funding is contingent upon student progress, the accuracy of the data reported by the building data managers is critical. Training has been designed to provide data managers with the knowledge and skills in order to meet the specific duties described within the Reading First-Ohio approved grant.

Building data managers are responsible for maintaining the building data reporting system, becoming skilled in the technological aspects of the data reporting system, ensuring the accuracy, reliability and validity of data which is submitted, performing applicable data analyses, monitoring progress of students, assisting building staff in identifying students in need of additional instruction or intervention,
coordinating data sources within the building/district and assisting and supporting staff in using data sources in making data-based decisions. Training was developed that would develop knowledge and skills of those working in the capacity of building data managers in order to perform their duties.

Evaluation of the training model followed the six stage model developed by Brinkerhoff (1987). Critical questions are posed at each of the six stages and the evaluation will guide training in future years. The model is detailed in Chapter 3.

PURPOSE AND SIGNIFICANCE OF THE STUDY

The purpose of this study is to examine the efficacy of the training developed for data managers in Year 1, Cohort 1 of the Reading First-Ohio project. Training was developed to further knowledge and skills of the building-based data managers. No research was located that examined training for building-based personnel who are responsible for collecting, reporting, monitoring and sharing data with building staff which is then used to inform classroom instruction. This research uses a cyclical evaluation model for human resource development. The model follows participants from training into the work environment and examines the use of the knowledge and skills on the job and the organizational benefit derived from the knowledge and skills gained as a result of the training. This is of particular importance to the Ohio Department of Education, which has funded the districts and developed the training. The entire Reading First-Ohio program is dependent upon the use of scientifically-based reading research tools and materials and the use of data to screen, monitor
progress and assess outcomes of student progress in order to increase student achievement in reading. If schools and districts are to use the data within the program effectively, having a strong training program for those functioning in the role of the building data manager is essential.

STATEMENT OF THE PROBLEM

The Ohio Department of Education mandated that all schools participating in the Reading First-Ohio program must employ a quarter time (.25 full time equivalent) building data manager. Training was developed to increase knowledge and skills for data managers. This study seeks to examine the efficacy of the training developed for the data managers in Year 1, Cohort 1 of the program. To answer the general question of whether the training provided was effective in developing knowledge and skills needed in order for data managers to perform effectively in their role, the answers to the following specific hypotheses were sought:

1. Is there a relationship between participants’ scores on cognitive assessment 1 and performance assessment 1 (Brinkerhoff Evaluation Model, Stage 4)?

2. Is there a relationship between participants’ scores on cognitive assessment 2 and performance assessment 2 (Brinkerhoff Evaluation Model, Stage 4)?

3. Is there a relationship between participants’ scores on cognitive assessment 1 and cognitive assessment 2 (Brinkerhoff Evaluation Model, Stage 4)?

4. Is there a relationship between participants’ scores on performance assessment 1 and performance assessment 2 (Brinkerhoff Evaluation Model, Stage 4)?
5. Is there a relationship between participants’ scores on cognitive assessment 1 and on field checklist 1 (Brinkerhoff Evaluation Model, Stage 5)?
6. Is there a relationship between participants’ scores on performance assessment 1 and field checklist 1 (Brinkerhoff Evaluation Model, Stage 5)?
7. Is there a relationship between participants’ scores on cognitive assessment 2 and field checklist 2 (Brinkerhoff Evaluation Model, Stage 5)?
8. Is there a relationship between participants’ scores on performance assessment 2 and field checklist 2 (Brinkerhoff Evaluation Model, Stage 5)?
9. Is there a relationship between participants’ scores on field checklist 1 and field checklist 2 (Brinkerhoff Evaluation Model, Stage 5)?
10. Do data managers who serve three or more buildings perceive their effectiveness differently than those data managers who serve two or fewer buildings (Brinkerhoff Evaluation Model, Stage 6)?
11. Is there a difference in effectiveness perceived by building staff (principals, literacy specialists and resource coordinators) for data managers who serve three or more buildings and those who serve two or less buildings (Brinkerhoff Evaluation Model, Stage 6)?
DESIGN OF THE STUDY

Using a six-stage evaluation model, the training of the data managers was examined using primarily a quantitative design. Because of the importance of the data within the *Reading First-Ohio* program and because funding is dependent upon the collection and use of good quality data, a quantitative design was selected which could ascertain the efficacy of the training. In addition to the quantitative design, additional data will be collected through structured, open-ended interviews with building data managers to guide planning efforts for future training. Data from the interviews will be analyzed cross-case and will be coded for themes which will be used to elaborate and enhance quantitative data and results previously collected and examined during the evaluation in order to further inform the planning of the Year 2 training.

LIMITATIONS OF THE STUDY

This study is limited by my staff role at the Ohio Department of Education as co-director for the *Reading First-Ohio* project and my involvement with the data managers. This study was also limited by the small number of data managers who were subjects in the research (29). Especially when looked at as two groups, separated by the number of buildings served, this small number became a serious limitation. Of the twenty-nine data managers, only three were male. Because of this,
it is impossible to generalize the results beyond the population studied. And finally, this study did not utilize an experimental design nor a quasi-experimental design. No control group was used.

DEFINITION OF TERMS

Data Manager:

The data manager is a quarter time position (.25 full time equivalent) which is mandated in the Reading First-Ohio program. The data manager is responsible for collecting and reporting assessment data to the Ohio Department of Education. He/she is also responsible for analyzing and sharing data with building staff in order to inform classroom instruction.

Diagnostic Assessment:

A diagnostic assessment is required to be administered to all students who are determined to be at-risk on the screening assessment. The diagnostic assessment provides the classroom teacher with information about a child’s strengths and weaknesses which can be used to instruct the child. The Texas Primary Reading Inventory (TPRI) is used for this purpose within the Reading First-Ohio program. No data is collected for the diagnostic assessment.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS):

The DIBELS assessment is a short-cycle assessment that can be administered by a classroom teacher in a very short time but will yield valid and reliable results. The DIBELS has subtests which assess aspects of phonemic awareness, phonics, fluency, vocabulary and comprehension. In Reading First-Ohio the DIBELS is used to monitor progress at kindergarten through third grade at three points during the school year in the areas of phonemic awareness, phonics and fluency. It is also used as the screening assessment at third grade.

District Coordinator:

Each funded district is responsible for hiring a half time (.5 full time equivalent) person who is responsible to oversee all functions of the Reading First-Ohio project.
EMIS:

EMIS (Educational Management Information System) is the official state data collection system. Districts report data for funding and accountability purposes to the state through this system. It is considered the most accurate source of school district data.

Literacy Specialist:

Each Reading First-Ohio building is required to employ a full-time literacy specialist. This literacy specialist must have advanced training and education in reading. The literacy specialist provides professional development opportunities for building staff and also coaches teachers within the classroom in order to improve reading instruction.

Outcome Measure:

Each state receiving Reading First funding must designate a standardized achievement test as an outcome measure. In Ohio, the TerraNova I Multiple Assessment: Reading has been selected for this purpose.

Progress Monitoring:

Each state receiving Reading First funding must select a valid and reliable assessment that will be used to monitor the progress of students during the course of the year. Ohio has selected to use the DIBELS for this purpose. Data is collected and reported by the data manager in each building in November, February and April.

Resource Coordinator:

Each Reading First-Ohio building is required to employ a quarter time (.25 full time equivalent) resource coordinator. The resource coordinator is to ensure alignment of all materials, supplemental services and interventions within a funded building. He/she is also to ensure that all tools and materials used are reflective of scientifically-based reading research.

Scientifically-Based Reading Research:

The term scientifically-based reading research a) means the application of rigorous, systematic and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and b) shall include research that (i) employs systematic, empirical methods that draw on observation or experiment, (ii) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn, (iii) relies on measurements or observational methods that
provide valid data across evaluators and observers and across multiple measurements and observations, and (iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective and scientific review.

Screening Assessment:

Each funded building is required to administer a valid and reliable screening assessment to all students in kindergarten through third grade. The purpose of the screening assessment is to identify students who are at-risk for experiencing reading difficulties. The screening assessment is administered in late September/early October. The building data manager must collect and report results from this assessment to the Ohio Department of Education. The Texas Primary Reading Inventory (TPRI) is used for this purpose at kindergarten through second grade. The DIBELS is used for this purpose at third grade.

Texas Primary Reading Inventory (TPRI):

The TPRI is a valid, reliable assessment that is used for diagnostic (K-3) and screening purposes (K-2) in Reading First-Ohio. It assesses reading/listening comprehension, book/print awareness, phonemic awareness and graphophonemic knowledge.
ORGANIZATION OF THE STUDY

This study is presented in five chapters. Chapter 1 introduced the problem and method of study. It included background information important to understand the context of the study as well as a brief discussion of the study’s significance and limitations. Definitions of relevant terms are also included.

Chapter 2 reviews the literature which is pertinent to this study. Chapter 3 discusses the research design. The methods used for data collection are also described. Chapter 4 discusses the findings of the study. Chapter 5 presents a summary of the study, limitations of the study, and suggestions for future research and implications.
In this chapter, the content-area literature which was considered in the use of the evaluation cycle of the Brinkerhoff model for evaluating the training for data managers in *Reading First-Ohio* are examined. The areas considered are: characteristics of adult learners, adult learning theory, evaluation models of professional development and human resource development, professional development in education and data-based decision-making in education.

**CHARACTERISTICS OF ADULT LEARNERS**

In planning training for adults (Brinkerhoff, Stage 2), it was necessary to examine the literature for common characteristics of adult learners so that the training planned was most effective. The literature points to several characteristics common to adult learners. Smith (1982) suggests that there are six conditions for adult learning and that adults learn best when all six conditions are met. According to Smith, adults are motivated to learn when they have input into what, why and how they will learn. In the development of training, data managers who were present at the convocation in August expressed that they wanted to know exactly what they
would be doing, the timeline for their work and the processes that would be used for their work. This was considered in the development of the training. In fact, it became the basis of the training. Smith also states that the content and processes of learning are related to the adult learner’s past experiences. During the actual training sessions (Brinkerhoff, Stage 3), examples from the field of education were used because most participants could relate to them. Additionally, the training was conducted in an open atmosphere where participants were free to ask questions and state specific examples to illustrate their questions.

Smith also states that it is important for adult learners to understand what is to be learned and how it relates to the adult learner’s developmental changes and life tasks. Adult learners want to be able to relate content to their personal interests, work or career goals (Zemke & Zemke, 1984). They tend to be interested in results, and if learning experiences do not apply to their concept of what the learning experience should render, they tend to disengage. Adults often exhibit a problem centered approach to learning. Relevancy needs to be established early in the learning situation. The life task that is directly related to this training is that all participants had started a new job, that of building data manager for the purpose of this grant, and were anxious to learn what was expected of them and to acquire the knowledge and skills to be successful in their new role.

Smith also states that the amount of autonomy in a learning activity is related to the mode or method of learning used. Adult learners want to have some degree of control over their own learning. They tend to approach new learning experiences as important, often relative to their work or career goals. Goals for learning should be
clearly defined and directly and explicitly applicable to their work or life situation. Adults also tend to be self-directed in their learning (Knowles, 1984). This was considered in the use of hands-on activities entering and checking data during the training (Brinkerhoff, Stage 3 and 4) and during site visits and technical assistance offered to training participants (Brinkerhoff, Stage 5).

It is also known that adults learn best in a climate that minimizes anxiety and encourages freedom to experiment; and, finally, the learning styles of adults are considered in the learning opportunity. This was considered throughout the training and evaluation cycle. Training was conducted in a non-threatening atmosphere. Participants were encouraged to ask questions as they occurred. The evaluation components conducted during training sessions were always stressed as an evaluation of the training in order to improve it, and data managers were eager to assist the Department in this endeavor (Brinkerhoff, Stages 4 and 5).

Adult learners bring a wealth of life experiences and knowledge to a learning situation. These past experiences affect what the learner learns and form the foundation for present learning. These experiences may be work-related, family-related or stem from previous educational experiences. Adult learners vary widely in age, experience (work or educational), personal identities and personal experiences. Adults also have established views, beliefs, opinions and values which influence the learning situation (Lieb, 2002). These experiences were considered in the development of training. For example, during training sessions, data managers were encouraged to share previous experiences and practices they found useful and helpful. Technical assistance that was offered to data managers throughout the course of the
year was individually tailored (Brinkerhoff, Stages 5). Additionally, as part of the training, a web-based opportunity for data managers to exchange ideas, issues and to have threaded discussions throughout the year has been built into the training as a component for next year to address this need to address the varying needs between participants.

Adult learners’ perception of themselves influences the learning situation for them. Some adults enter learning situations with clear understanding about their own learning styles and needs. Other learners may feel self-conscious about returning to school or learning after a long period away from such situations. An adult’s impression of his/her own learning abilities and of schools/teachers and learning situations tend to influence their learning experience. Researchers in learning styles hold the view that individuals are different in the ways they perceive and process information and in the way they most effectively learn, whether that is alone or with others, doing rather than hearing about new information (Dunn and Dunn, 1978; Gregorc, 1979). In the development of training (Brinkerhoff, Stage 2) this was considered as most data managers expressed at least some anxiety about what was expected of them. The level of technical skills possessed by the participants varied widely and it was desirable to relieve the anxiety of the participants by clearly expressing the expectations of the position from the approved Ohio grant and also by looking at the job descriptions/position postings developed by the individual districts. These were submitted to the Ohio Department of Education as part of the subgrant which districts submitted for funding. During the actual training (Brinkerhoff, Stage 3), these job descriptions were distributed to all participants, as well as the job role
and responsibilities from the approved Ohio grant to the U.S. Department of Education. The mode of learning was altered, with short presentations, discussion, hands-on activities and on-the-job application of skills.

Adult learners are motivated to learn for a variety of reasons. Some are motivated by social relationships and tend to approach learning situations as an opportunity to meet new friends and establish relationships. Some adult learners engage in learning experiences in order to comply or impress an authority figure. Others approach new learning situations to improve social welfare for others (i.e. to serve the community, to improve their ability to do work for the community to improve or serve others). Some adult learners approach new learning situations as an opportunity for personal/professional growth or advancement. Yet others approach learning situations as an opportunity to relieve boredom or to provide a break from home or work. Other adult learners approach new learning opportunities simply because they enjoy learning and seek to know more for the sake of learning or for the satisfaction of knowing more (Lieb, 2002). These various motivations for learning were considered in the development of the training for the data managers (Brinkerhoff, Stage 2). Opportunities for interaction were built into the training for those who are more social in their learning. The overall goal of the program (Reading First-Ohio) is for students to read at or above grade level by the end of the third grade. The value of good practice in using assessment data and how data managers are able to contribute to that process was stressed throughout the training so that participants could see the benefit for students and teachers in increasing the effectiveness of their classroom practices.
Once an adult learner has decided to undertake a new learning experience, four motivational factors should be monitored through the learning (Wiodkowski, 1985). These are monitoring the learner’s attitudes towards the environment, the instructor, the content and his/her self; the learner’s needs should be acknowledged and addressed; the learner’s affect should be acknowledged and addressed and at the conclusion of the learning; and the adult should feel a sense of competence which should be reinforced. Lanier and Little (1986) caution against the use of external incentives, as adults may initially be attracted to the learning opportunity because of the motivator (i.e. cash incentive). Learning under these conditions is inversely related to the use of the recommended practices in the work environment. These factors were considered in the development and training and assessed through the session evaluations. Instructors were varied and the environment was considered, assessed and monitored throughout the training (i.e. room temperature, access to computers, refreshments/lunch available, etc.) Additionally, by creating an open, non-threatening atmosphere, questions from the participants were encouraged. These environmental factors were purposefully created in response to these needs of the adult learner. It should also be noted that all of the participants willingly applied for the position of data manager, except for one, who was instructed that this would be a function of the person’s role in a different capacity within the school.
In the development of training for data managers (Brinkerhoff, Stage 2), it was necessary to consider the literature in adult learning theory. It is noted by Cross (1981) that “one of the most underutilized vehicles for understanding various aspects of adult learning is theory” (p. 109). Theory in adult learning has been described as a “conceptual desert” (Boshier, 1971, p. 3) and Mezirow stated that the absence of theory in adult learning is a “pervasively debilitating influence” (1971, p. 135). While there have been some advances in theory in the past twenty years, the literature is not extensive in this area. The practical nature of adult learning may lend itself to a more pragmatic approach, but the “lack of theory is easier to explain than to defend” (Cross, 1981, p. 109). The absence of theory has been attributed to the emphasis in the field of adult education to respond to the needs of adult learners, who have more need for practical learning opportunities which are problem-based and emanate from either a work related problem or a problem or area of personal interest in their outside-of-work life. Obviously, from a market approach, there is more potential in developing training which meets these needs rather than developing theory about the complexity of adult learning. However, “theory without practice is empty, and practice without theory is blind” (Cross, 1981, p. 110). A few theories in the field of adult education have gained considerable attention. Two that are applicable in this study are Knowles’ theory of andragogy and Mezirow’s theory of transformative learning, which will be discussed.
Knowles (1998) developed the theory of andragogy to describe the art and science of educating adults. In some respects, it has served as the unifying theory of adult learning, since it was the earliest theory set forth to specifically describe the learning of adults. The theory acknowledges that adults are self-directed in their learning and they expect to take responsibility for their decisions. In education, andragogy can be contrasted with pedagogy which is the art and science of educating children. Differences between andragogy and pedagogy are summarized on Table 1.

<table>
<thead>
<tr>
<th>Andragogy</th>
<th>Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners are self-directed</td>
<td>Learners are teacher-directed</td>
</tr>
<tr>
<td>Teacher/facilitator serves as a content resource, often providing leads for other content resources (peers, supervisors, etc.)</td>
<td>Teacher serves as a content expert</td>
</tr>
<tr>
<td>View of instructor is that of a guide or facilitator</td>
<td>View of teacher or instructor is that of an authority figure.</td>
</tr>
<tr>
<td>Learning is problem-centered, often determined by a life-need that the learner encounters (could be related to either job or personal life)</td>
<td>Learning is subject-centered and content is determined by the teacher</td>
</tr>
<tr>
<td>Learners determine the purpose for learning</td>
<td>Purpose of learning is teacher-imposed and learners sometimes have difficulty determining why they are learning something</td>
</tr>
<tr>
<td>Wealth of experience brought to the learning situation</td>
<td>Lack of experience brought to the learning situation and learners must be shown how to use this to further learning</td>
</tr>
<tr>
<td>Responsibility for learners’ learning rests with the learners</td>
<td>Responsibility for learners’ learning rests with the teacher</td>
</tr>
<tr>
<td>Learning is voluntary</td>
<td>Learning is compulsory</td>
</tr>
<tr>
<td>Intrinsically motivated</td>
<td>Motivated by external rewards and punishment</td>
</tr>
<tr>
<td>Learners must balance life responsibilities with learning</td>
<td>Learners do not have many, if any, life responsibilities to balance with learning and are able to devote more time to learning activities</td>
</tr>
<tr>
<td>Learning is initiated by the learner and tends to be long-term</td>
<td>Learning is compulsory and is often forgotten shortly after instruction and/or assessment</td>
</tr>
</tbody>
</table>

Table 1. Differences between andragogy and pedagogy.

In the theory of andragogy, several assumptions are made (Knowles, 1984, Appendix D). The first is that adults need to contextualize their learning. They must
understand why they need to learn something new. This assumption was particularly important in the structuring of training for data managers (Brinkerhoff, Stage 2 and 3.)

The second assumption is that adults learn experientially. Rogers equates experiential learning to personal change and growth (1969, 1994). Rather than learning in passive situations, adults are most effectively engaged when their learning is interactive. This assumption was also incorporated into the training for data managers. Each training session included hands-on opportunities to practice the skills taught in the training sessions with the support of trainers (Brinkerhoff, Stage 3).

The third assumption is that adults learn best when learning is presented as a problem-solving process which draws on their extensive personal background knowledge and experiences. This was particularly evident in the technical assistance that was offered to data managers throughout the year as issues and questions from the field arose and were resolved or answered (Brinkerhoff, Stages 4 and 5). Making accommodations for differing levels of experience is beneficial when working with adult learners.

Finally, adults learn best when they are learning something that is of immediate value to them (i.e. they must do something meaningful with the newly acquired knowledge). During the training, data managers were instructed on issues that were directly applicable to their work situation and could be put immediately into practice upon returning to their work sites. For example, data managers were instructed on data entry procedures, procedures to assure the security of data, data
sharing processes. Then they went into the field and performed these same skills and
applied the knowledge they gained from the training (Brinkerhoff, Stages 3, 4, 5).

As you can see, the assumptions in andragogy look very much like the
characteristic of adult learners in the first section of this chapter. It is important to
note that there has been criticism of the theory of andragogy as a learning theory.
Hartree (1984) criticizes it and believes andragogy is more of a model for instruction
of adult learners and a set of assumptions about the learner than a learning theory
itself. Hartree asserts that if andragogy were a true learning theory, it would have
philosophical underpinnings which would ground it to a particular approach to
learning (p. 209). Some have questioned whether the learning of adults is really
significantly different from that of children. This depends on the belief system which
is operationalized in thinking of children as learners and if they are viewed as being
fundamentally different than adults. If so, then andragogy holds particular appeal
since it does distinguish between adults and children. The body of literature about
adult learning theory has developed fairly recently, although “there is continuing
debate between some theorists who believe that adult learning and child learning are
significantly different and others who believe that the process of learning does not
change” with the age of the learner (Olsen, Butler & Olsen, 1991, p. 15). There is no
compelling research on either side, but there are some commonly held beliefs about
the characteristics of adult learners which were discussed in the first section of this
chapter.

Andragogy often surfaces when training programs are developed specifically
for adults, which would distinguish it more as an instructional model than a learning
theory. There is some discussion that andragogy marks the boundary between the education of adults and human resource development. St. Clair (2002) claims that adult educators have “taken the high ground” in this discussion and claim that the purpose of their work is to develop people rather than influence the profit of organizations. With demands for accountability increasing, though, there has been movement of these two, seemingly disparate, views together. This movement is of particular interest in the context of this study, since the training for data managers might be classified more as human resource development than adult education and for the purposes of this study, is being evaluated with an evaluation model designed for human resource development. Because accountability is so high in Reading First, it does seem that adult learning and human resource development have converged in this particular instance and it is appropriate to view the training as such.

A general theory of learning that does have application in this study is cognitive flexibility theory. This theory is rooted in constructivist theory and is most applicable, within the context of this study, when knowledge and skills are transferred beyond their initial learning experience (Brinkerhoff, Stages 4 to 5). Spiro and Jehng (1990; p. 165) explain the theory as “the ability to spontaneously restructure one’s knowledge, in many ways, in adaptive response to radically changing situational demands.” The authors draw contrast between “schema retrieval” and “schema assembly” processes (p. 165). Cognitive flexibility theory has implications for planning instruction for adult learners. Learning experiences should not be oversimplified and should provide case-based situations in which learners can apply newly acquired knowledge and skills. Learners should be encouraged to construct
their own knowledge rather than acquiring knowledge transmitted from the instructor (Spiro, 1988, 2001). This theory was considered in the development of training for data managers (Brinkerhoff, Stages 2 and 3). Situations were given during training to illustrate particular points and participants were asked to demonstrate skills in the laboratory setting, discuss issues they encountered, and then transfer these skills to the field setting of their work (Brinkerhoff, Stages 4 to 5). Additionally, data managers applied their knowledge and skills in the field as they encountered numerous situations that were discussed during the individual technical assistance sessions.

Another general theory of learning applicable to this study is criterion referenced instruction, developed by Robert Mager. This theory is often applied in situations where adults are permitted to pursue learning at their own pace, but it can be incorporated into traditional training programs where specific performance objectives are important as a result of the training. This theory has also been described as mastery learning and is congruent with the self-directed nature of most adult learning theories and processes (Mezirow, 1985). Instructional objectives are determined by the skills that need to be demonstrated in the workplace and knowledge and skills necessary are taught in the learning situation. Training which is aligned with this theory typically contains opportunities for learners to practice the skills which are desired in a low-risk situation with feedback from the instructor, as data managers did during training opportunities (Brinkerhoff, Stage 3). Often there is a performance assessment as a component of the learning experience as there is in
this instance. Performance assessment was an important component in the evaluation of the training for data managers (Brinkerhoff, Stage 4).

The second major theory of adult learning that has applicability in this study is transformative learning. Transformation implies a fundamental change. In learning situations, it is represented by a dramatic shift in the way people view themselves and the world. In the context of this study, it could be viewed in multiple ways. The first is that data managers themselves could have fundamental shifts in their own beliefs as they see students becoming successful readers as a result of this program and through the use of data. It could also be viewed as data managers as the conveyers of information which serves to fundamentally and dramatically forge a new view of instruction and learning and the development of processes and procedures to support this new view held by other educators. In the Brinkerhoff model, this would be seen in Stage 6 as organizational impact of the training received by data managers is examined. There are different approaches to transformative learning (developmental, emancipatory, extrarational, and cognitive/rational). Applicable to this study are the emancipatory and cognitive/rational views.

Freire (1995) wrote of his experience teaching Brazilians to read by discussing social issues. Through these discussions and experiences, the workers recognized the oppressive conditions under which they lived and they strived to change the structures which served to oppress them (Baumgartner, 2003). Learning to read and the discussions they had in the process served to emancipate them from their present conditions. With this in mind, teachers and schools recognize the value of learning to read. The federal government also recognizes the importance of this
skill and funded *Reading First* in an effort to help students, grades K-3, learn to read. As previously stated, *Reading First* focuses funds on the lowest achieving, highest poverty school districts within a given state. In the Ohio model, the position of data manager was funded. This position was one of three at the building level which serves as the structure and conduit to fundamentally change the way teachers teach reading and to influence student achievement. Data managers see themselves as part of this fundamental change in student learning and the value of learning to read for these children.

Emancipation, though, may also be viewed in another way. Emancipation from the role of classroom teacher may also be a motivating factor for data managers in accepting the position, as all but one data manager applied for and won his/her position. Additionally, in the group of data managers, three data managers changed professions either for or as a result of their work as a building data manager. One data manager has decided to become a special education teacher and two data managers entered the field of education from other careers (architect, financial planner) solely to work as building data managers within this program. And so, transformative learning becomes important in this regard, as it allows a person to acquire knowledge and skills which will allow him/her to move out of the role of classroom teacher for those in education previously, or into the field of education for those who were not previously employed within the profession.

Mezirow (1981, 1991, 1995, 2000) advances the cognitive/rational approach to transformative learning. This approach calls for reflective practice in order to abandon one’s previously held views of the world and arrive at a new perspective.
For learners to change their “meaning scheme (specific beliefs, attitudes, and emotional reactions),” they must engage in reflection on their own experiences in the process of transformation (Mezirow, 1991, p. 167). Transformation is “the process of becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand, and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating and integrating perspective; and finally, making choices or otherwise acting upon these new understandings” (Mezirow in Imel, p. 2). In some ways, school districts and individuals within them and their beliefs that either children can’t learn to read or their views that their school districts can not overcome the issues that confront them and impede student learning (i.e. mobility, poverty, lack of experiences to support learning, social/emotional issues confronted by children, etc.) lead to a set of circumstances that may cause educators to hold views that they will work hard, but will work in vain. Transformative learning represents a fundamental shift from this belief to a new belief where children do learn, despite the barriers set before them. Opportunities for reflection are critical in this process and must be embedded within the learning opportunities.

In this sense, Reading First and the model set forth by Ohio with a building trio of the literacy specialist, the data manager and the resource coordinator, may represent hope for districts and individuals who serve children who have, in many ways, been left behind by instructional and organizational practice. The building trio and the learning they gain in their training opportunities, offer hope to educators who work in these buildings that learning can, in fact, occur for these children and that
learning at high levels is, in fact, a possibility. So learning, in this sense for the adults involved in these leadership positions, becomes a conduit to transformative learning for themselves, as they confront previously held views of student learning toward the transformation of their life views that learning for these students can, indeed, occur and that they (the adults) are part of a transformative process for both themselves, as their views change, and for the children that they serve. Given the resources, the knowledge and skills, learning can indeed be transformed for these children, as well as the transformation of paradigms held by the adults employed within these districts. *Reading First* represents the hope, opportunity, and resources to do what could not be accomplished in these districts to date. Transformative learning applies to individuals and also to both the community of learners that has been created within the group of data managers as a whole, and in districts with multiple data managers, this process would also apply to the community of data managers within that district. Additionally, transformative learning applies to the community of learners that has been created at the building level with the building trio and the principal. By serving as members of a community of learners, data managers and others are united in an effort to create meaning of the experience in which they are collectively engaged as they seek to transform data to information and then to knowledge in order to inform the instructional process for the benefit of students.
There are many definitions of evaluation in the literature, but one of the most accepted definitions is held by Ralph Tyler, considered to be the father of evaluation. Evaluation, as defined by Tyler, is “the process of determining to what extent the educational objectives are actually being realized” (Tyler, 1950, p.69). Another widely accepted definition of evaluation is that of providing information for decision making. This definition is advanced by evaluators such as Stufflebeam (1971) and Cronbach (1963). More recently, convergence of definitions of evaluation have produced a definition of evaluation as “the assessment of merit or worth” (Stufflebeam, 1974, 1988). A joint committee on standards for evaluation, comprised of seventeen members of twelve organizations associated with educational evaluation defined evaluation as “the systemic investigation of the worth or merit of some object” (Joint Committee, 1981, p. 12). The Western Michigan University Center for Evaluation, a respected evaluation center, defines evaluation as “the systematic process of determining the merit, value and worth of someone (the evaluatee, such as a teacher, student or employee) or something (the evaluand, such as a product, program, policy, procedure or process” (see http://ed.wmich.edu/g.htf?trm='Evaluation,’”Glossary’).

Evaluation occurs for two purposes. Formative evaluation seeks to inform and improve processes or activities. Summative evaluation is often used to judge the merit or worth of a process or activity. In the context of this study, evaluation is both
formative and summative. It is formative in the sense that we know training must occur for those named as building data managers and there is intent to use evaluative information about the training to improve future training efforts. It is summative in the sense that the training that has occurred reflects a complete year of training and it is desirable to assess the impact of that training. Stufflebeam (1971) draws distinction between proactive evaluation which serves decision-making and retroactive evaluation to serve accountability purposes. The CIPP model for evaluation, developed by Stufflebeam, is a major model in evaluation theory and practice. The CIPP model advances a comprehensive framework for formative and summative evaluations. It can be applied to all types of evaluation: projects, programs, personnel, products, institutions, and systems (Stufflebeam, 2002, 2003). CIPP stands for “context, inputs, processes and products” (Stufflebeam, 1983, 1985, 2000, 2002, 2003). Context evaluation includes assessment of needs, issues, and opportunities which inform decisions around goals, priorities and outcomes. Input evaluations often focus on bottom-line aspects such as cost-benefit analyses, budgeting, and more efficient alternative approaches. Process evaluations assess implementation while product evaluations assess outcomes.

The goal of human resource development is to impart knowledge and skills to those working within an organization so that it is better able to meet its goals. According to Nadler (1980) human resource development can take several forms. He describes training as being geared to improve the job performance of individuals within the organization. Conversely, education holds as its goal the advancement of individuals to different jobs. Development programs seek to improve an organization
through the betterment of individuals within the organization. But in all, human resource development tends to be behavioristic in philosophy with the intent to impart knowledge and skills which will improve organizational effectiveness (Peterson & Provo, 2000; Rowden, 1996). This is somewhat contradictory to adult education, which tends to be developmental in philosophy and focuses on transforming adults.

In the evaluation of training or human resource development, two streams of influence are apparent in the literature. The first stream was dominant in public education and social programs and dominated from the late 1960s until approximately 1978 (Brinkerhoff, 1987, p. xii). These evaluation models were largely formative in nature and were geared toward helping schools and agencies develop and measure the extent to which new programs were consistently implemented.

The second dominant stream of influence was evaluation models used in business and industry. These models tend to stress the “bottom line” and are often oriented toward the cost and organizational benefit of human resource development. Kirkpatrick, whose four step model is widely accepted in business and industry, identified four levels of outcome from training. These four steps can be assessed by typically asking four questions which evaluations following this model ask: “Did they like it? Did they learn it? Did they use it? Did it make a difference?” (Brinkerhoff, 1987; Hamblin, 1974; Kirkpatrick, 1976, 1994). Other models that are often used in business and industry focus more specifically on the outcomes of human resource development and stress cost/benefit models and other data-oriented approaches which
place value on the organizational benefits resulting from human resource development (Kearsley, 1982; Phillips, 1983; Rummler, 1976; Gilbert, 1978; Mager, 1984).

Brinkerhoff (1987) created a hybrid model which combined the formative philosophy of the education/social agency models and the outcomes of the models dominant in business and industry. The Six Stage Model “deals systematically and comprehensively with human resource development design, operation, and evaluation” (p. xv). Each stage is important to either the efficiency or worth of training and each stage has specific strategies and methods associated with it. “As information pertaining to each stage is collected and used, the probability for successful training—training that will pay off to the organization—is increased (p. 6). Human resource development efforts that are systematically evaluated are more successful, and a systematic evaluation creates data which can be used to justify the training or development effort. This model is explained in detail in Chapter 3.

In education today, evaluation models have evolved and have incorporated the outcomes, results-oriented evaluation models prevalent in business. “Evaluations help to foster accountability, determine whether programs ‘make a difference,’ and give staff the information they need to improve service delivery” (Muraskin, 1998, p.1). Effectiveness of professional development programs is now evaluated through demonstrated results and evidence, often measured through student learning. Guskey (2000) suggests that change must occur at many levels within an organization in order for professional development to increase student learning and achievement. Good evaluation can inform decision-making about professional development processes and
effects (Guskey, 2000, p. 2). Researchers have tried a variety of approaches to determine the effectiveness of professional development and which factors are the greatest contributors to effectiveness. Various approaches to this question have resulted. Some have sought to isolate features which are the greatest contributors to effectiveness (Massarella, 1980; Sparks and Guskey, 1983). Some have focused on determining elements of effective program implementation, while others have attended to using research to offer guidelines for more effective practice (Showers, Joyce, and Bennett, 1987; Wood and Thompson, 1993). Often, it is easier to identify insufficiencies rather than to identify elements of professional development which have led to successful change (Frechtling, J.A. et al, 1995). Sometimes, effectiveness is difficult to identify because there are various definitions of what would constitute the effectiveness of a professional development initiative.

Guskey (2000) advocates for a five stage model for the evaluation of professional development. The first stage is to gather initial reactions from participants. This is largely formative in nature with the purpose of improving the professional development. These indicators are often referred to as the “happiness indicators” and are relatively limited when used in isolation. In the Brinkerhoff model used in this study, this would be comparable to Stage 3 (session evaluations). The second stage of evaluation measures the resulting change in the participants’ learning. This can take the form of cognitive assessments, knowledge tests, logs or journals (Brinkerhoff, Stage 4). This type of evaluation is difficult to use for making comparisons or for evaluating the worth or effectiveness of a professional development initiative (Guskey, 1997). In the third stage of Guskey’s evaluation
model the organizational factors which can be “defining factors in a program of activity’s success” are evaluated (Guskey, 2000, p.151). This stage tends to focus on resources devoted to supporting the professional development effort, as well as other organizational factors which can serve to facilitate the use of the knowledge and skills gained by participants in professional development.

The fourth stage in the Guskey model assesses the use of the new skills and knowledge (Brinkerhoff, Stage 4 and 5). Methods for data collection at this stage include focus groups, interviews or observations and emphasize how participants in professional development use their new knowledge and skills in their job related duties (Guskey, 1997). And, finally, in the fifth stage, the effect of professional development on student learning outcomes are measured. Traditionally, data collected at this stage might include assessment results, grades, portfolio assessments, standardized test results, or achievement test results. But other sources of data can also include measures of students’ attitudes, study habits, school attendance, homework completion, classroom behaviors, graduation rates, enrollment in advanced coursework, participation in student activities (Guskey, 1997, p. 37). Guskey acknowledges that drawing inferences and conclusions that changes in student learning are the direct result of professional development is difficult, if not impossible, and that using measures of student learning as the main criteria for success are rare (Guskey and Sparks, 1991; Sparks, 1995). One of the only ways to draw conclusions from specific inputs to specific outputs (i.e. professional
development to student results) is through multilevel structural equation modeling. This is a multivariate statistical technique and is out of reach for most professionals employed within the educational field.

The National Staff Development Council supports the Guskey model in their evaluation standards for professional development. Also stressed by the Council is the importance of evaluation of professional development so that district leaders and others in positions of influence understand the impact and influence of professional development on student learning.

While this type of evaluation model is applicable in most educational situations, it is not appropriate in this study. Schools involved in Reading First-Ohio in Year 1 of funding are not held to a standard for student achievement. It would, therefore, be inappropriate to hold data managers to a standard that is not congruent with the rest of the organization or project. Thus, a model that does not include a final stage being assessed primarily through student achievement results was chosen. In Years 2 and 3 of implementation, the Guskey model may be appropriate to use.

PROFESSIONAL DEVELOPMENT

Professional development in education is often a major focus of systemic reform initiatives (Corcoran, 1995; Garet, et al, 2001). The training of data managers in Reading First-Ohio is a professional development opportunity, comparable to Stage 3 of the Brinkerhoff model. “While professional development activities have been a part of educational organizations for decades, rarely have they been
comprehensive, lasting, or an integral part of the day-to-day life of schools” (Olsen, Butler, & Olsen, 1991, p. 20). Changing the knowledge and practice of educators is the goal for professional development. Systemic reform, including academic standards and assessments based on standards, demand new behaviors for educators as well as new standards for student performance. Professional development is viewed as a vehicle for helping educators meet the new standards and demands placed upon them with increased focus on accountability and high quality professional development is now demanded by federal legislation (No Child Left Behind Act of 2001).

There are five approaches to professional development. All should be considered, as no single approach is effective in all situations. Rather, a combination of approaches, organized appropriately to match intent, context and desired outcome, should be considered. Coherence in professional development is desirable, but coherence is not always clearly defined (Ball & Cohen, 1999; Hawley & Valli, 1999). “Fundamentally, coherent professional development addresses a few areas in depth with effective follow-up” (Firestone, et al, 2004, p. 5). The first approach, the workshop/presentation, is often used as a first step in a professional development process. The workshop approach can be effective in “the acquisition of new skills and knowledge about a topic through direct instruction and participatory activities” (Pelavin Research Institute, 1998, p. 2-1). A workshop is often effective when introducing new ideas or strategies. The workshop/presentation approach “is well suited to practitioners who learn best from an expert providing information or skill-building in a particular area” (Pelavin Research Institute, 1998, p. 2a-1). Advantages
of the workshop/presentation approach is that it is the easiest of the four approaches to prepare for and it is the most inexpensive because it is able to reach large numbers. In the development of training for data managers in *Reading First-Ohio*, the workshop approach was used in the initial training activities for all training sessions so that information could be presented to participants in the most efficient manner (Brinkerhoff, Stage 2). But, when it is desirable to practice a new skill learned in a workshop, the second approach, observation/feedback may be more effective.

In the observation/feedback approach, educators are provided with data and feedback regarding their performance. Often accomplished in a collegial format, practitioners are encouraged “to analyze, critique, practice, reflect, and revise instructional practices” (Pelavin Research Institute, 1998, p. 2b-1). Peer coaching, mentoring and clinical supervision are all examples of the observation/feedback approach. Typically, a preobservation conference occurs, followed by observation, analysis of data collected during the observation and then a post-observation conference. There are several ways to collect data during an observation. Some of them include time notation, videotaping, tallying as certain behaviors are displayed or creating a running transcription of instructional activity. Disadvantages or obstacles to this approach include scheduling difficulties, establishing a sense of trust among participants, and the tendency of those being observed to view this activity as a performance evaluation. In the development of training for data managers, observation/feedback was incorporated into the training. Observation/feedback was incorporated as participants practiced their new skills in the lab setting (Brinkerhoff,
Stage 3), as well as through the site visits and the use of the field checklists (Brinkerhoff, Stages 4, 5). Because this was not a formal process, pre and post observation conferences were not incorporated.

The third approach to professional development is the inquiry/research approach. Here, educators “reflect upon their daily practices in a systematic, intentional manner, over time” (Pelavin Research Institute, 1998, p. 2-1). In this approach, educators reflect upon their instructional activities, review research in their area of interest, pose questions for inquiry arising from their experience and personal goals and develop analytical approaches for answering their questions. “A range of activities fall under the umbrella of Inquiry/Research, including study groups, curriculum writing, case studies, program evaluation, and trying out new practices. All are grounded in the interaction of practitioners with their environment, asking real questions” analyzing and learning new information and working collaboratively with others to explore responses Fingeret and Cockley, 1992; Pelavin Research Institute, 1998, p. 2c-1). An issue with the inquiry/research approach is the time commitment involved. It is a time-consuming process and must be systematically approached if it is to be used throughout an organization. If educators are to engage in reflection, study the research and literature in an area, document and analyze their classroom practice, implement and evaluate changes in practice, and share their results with others, considerable amounts of time must be built into daily activities to support these activities. In training, data managers were presented with reading materials which could support them in an inquiry/research approach, but this approach was not utilized formally in the training model.
The fourth approach to professional development is product/program development. This approach encourages the engagement of educators through activities such as program development or revision, curriculum development or revision or the development of tools to improve practice such as handbooks, resource manuals or toolkits. Product/program development is often not viewed as professional development and one issue that must be overcome is to educate practitioners that product/program development is indeed a worthwhile professional development activity worthy of the time and effort it requires. To date, this has not been incorporated in the training for data managers.

And finally, the fifth approach to professional development is individually-guided professional development. In individually-guided professional development activities, the learner is in control of his/her own learning. The learner selects goals and activities and determines when the goals have been met. Individually-guided professional development consists of the following phases: identification of a need or interest; development of a plan to act on the need or interest; learning activities; assessment of whether the learning met the need or interest (Sparks and Loucks-Horsley, 1989, p. 42). Learning activities may be traditional coursework or individually-designed learning activities such as projects, research, or curriculum development. In many ways, data managers have embarked on activities of individually-guided professional development. They have assessed needs within their buildings with regard to the presentation and communication of data and sought to fill those needs. They have developed forms, reports and mechanisms for communication (Brinkerhoff, Stages 4, 5). The individual technical assistance
provided to all data managers has impacted this process as needs were expressed and resources were gathered and provided. The impact of these efforts is reflected in the assessment of organizational impact (Brinkerhoff, Stage 6).

A large body of literature focuses on “best practices” in professional development, but “relatively little systematic research has been conducted on the effects of professional development on improvements in teaching or on student outcomes” (Garet, et al., 2001, p. 917). About ten years ago, a shift occurred in the focus of professional development activity (Guskey, 1999). The focus shifted from one-time, large group presentations and workshops toward professional development activities which offer the opportunity to begin with the desired outcome and work backward. Guskey (1999) stated that by focusing on ends rather than means, change has occurred in the research and practice of professional development. This focus illustrated that large-group presentations, training programs, workshops and seminars are not ineffective, but they are just insufficient. They are good ways of establishing a common knowledge base, but in order to acquire changes in practice and increased academic achievement and results with students, they must be accompanied by other structured opportunities such as practice with feedback, collaborative planning and ongoing support. This process of focusing on ends was indeed present as professional development needs were assessed and training was planned (Brinkerhoff, Stages 2, 3). The job description of the data manager was taken from the Ohio grant, the function of the role was contemplated with expert advice and insight, and training was established which would allow data managers to acquire the knowledge and skills in order to be effective in their roles.
Additionally, high expectations and rigorous standards were set for data managers. According to Guskey (1999), clear expectations for what is to be accomplished and how success will be measured are necessary for effective professional development. Clearly defined goals help to establish specific criteria for success and allows for the systematic evaluation of efforts, documentation of progress, and recognition of achievements. Because so much was at stake for these districts in terms of funding and for these students in terms of learning to read, the need for good quality training was urgent. The cognitive assessment (Brinkerhoff, Stage 3) was developed to measure the knowledge that was acquired by data managers as a result of their training. Additionally, it was recognized that data that was entered needed to meet high standards of quality. This was reflected in the overall training in the development of the performance assessment (Brinkerhoff, Stage 4) and the inclusion of a measure of accuracy of submitted data on both field checklists (Brinkerhoff, Stages 4 and 5).

The impact on organizational practice was the ultimate goal of the training. This was measured through the questionnaire which was distributed to data managers and data consumers (principals, literacy specialists and resource coordinators). Guskey (1999) adds that by focusing on ends, perspectives on the influences and effects of professional development can be broadened. The results of professional development are affected by a complex pattern of forces related to the individuals involved but also to the organizations in which they work. The importance of a systemic approach to professional development that considers both individual and organizational factors becomes clear by focusing on ends.
Additionally, it was recognized that all situations were unique and that what worked well in one context could not work in others. Throughout this training, technical assistance to individual data managers was extended and utilized. In many cases, this technical assistance was focused on the unique needs presented by a particular circumstance.

“Fourth and most important, the focus on ends empowered staff developers to make what they do count. With clear goals in mind, staff developers could search for the optimal mix of effective practices that would lead to the results they wanted. Instead of trying to implement some nebulous set of vaguely defined ‘best practices,’ they could adapt diverse practices to fit particular schools and organizations. In essence, they were free to adapt a variety of means to accomplish the important ends they sought” (Guskey, 1999, p. 48).

The effectiveness of professional development activities should be considered throughout the process, beginning with planning (Guskey and Sparks, 1996, p. 34). In planning professional development activities, planners should begin by asking what improvements in student learning are sought and what changes must occur as well as whether professional development is necessary in order to help the organization achieve the intended goals. Those planning professional development must also ask how they will know whether professional development was the cause of improvements in student learning. Although not explicitly tied to student learning outcomes this year, the training of data managers was always viewed as having impact on student learning. The use of data, the presentation, and communication of data in the instructional process, was always viewed, in the planning, as the most important application of the knowledge and skills required (Brinkerhoff, Stages 2, 3, 4, 5, 6).
The quality of professional development activities is influenced by a number of factors. Among those, most can be classified into three categories: content characteristics, process variables and context characteristics (Guskey, 1995; Sparks, 1995). These three characteristics are extremely important in the planning and execution of high quality professional development activities, so much so, that they form the structure for the Standards for Staff Development, developed by the National Staff Development Council (1995). Content characteristics of professional development are those that focus on the new knowledge, skills, attitudes and/or understandings which will result from participation. Content characteristics also focus on the scope of the new change which is desired as a result of the professional development activity (Fullan, 1991; Crandall, Eisemann and Louis, 1986). The magnitude and scope of the change must be reasonable. If it is to be realistic, a balance must be struck between massive change, which overwhelms, and a change which is so small that it does not have any effect on organizational effectiveness or student outcomes. Process variables focus on the type and forms of staff development as well as the way in which those activities are planned, organized, executed and revisited. Most research in professional development focus on this area, including activities such as coaching, action research or study groups (Joyce & Showers, 1995; Loucks-Horsley et. al., 1987). This was considered as training for data managers was planned and as an evaluation model was sought. Especially important was keeping in check the realistic impact the data manager could have in
one year. An evaluation model which did not tie the training outcomes to student achievement was sought for Year 1 because it was recognized that the expectations of impact had to be realistically addressed and evaluated.

Context characteristics of professional development focus on the organization, system or culture in which professional development occurs, as well as where the new knowledge, skills, attitudes and/or understandings will be implemented. Important, especially in the context of the accountability movement, is the pressure created around a particular professional development process or activity and how this pressure influences the professional development itself (Guskey & Sparks, 1996, p. 35). Implicit in Reading First is a certain degree of pressure. Being part of the No Child Left Behind Act of 2001 creates some pressure, but the threat of the loss of funds at the end of Year 2 (if the school/district does not demonstrate progress) looms large. By choosing an evaluation model which does not unrealistically tie the data manager to student results in Year 1, this pressure was somewhat minimized.

Content and process variables are highly influenced by characteristics of the setting (i.e. organization) in which they occur (Fullan, 1985; Huberman & Miles, 1984; Guskey, 1994). The effectiveness of professional development is contingent upon the ability to capitalize on the organizational context in which the professional development occurs. One issue noted in the evaluation of professional development as evidenced by student learning outcomes is the interaction between appropriate content, process and format (National Staff Development Council, 1995). More appropriate questions when evaluating professional development may be to ask under what conditions professional development is likely to have a positive effect on
Another approach in the evaluation of professional development is to identify programs which have made differences in student learning and then identify elements within these efforts that appear to make a difference, but case studies which focus on only one effort can not be generalized. This is precisely what is underway at the end of Year 1 training. Success case examples which have led to a high degree of student progress are sought so that others may learn from them. In the context of this study, outstanding examples of data use and processes which lead to high levels of student achievement will be highlighted so that others may learn from them. These examples will become part of the Year 2 training.

Four principles in effective professional development have been recognized (Guskey, 1997). The first is that professional development has a clear focus on learning and learners. In the training which was developed for the building data managers, clear expectations of how the use of data could impact student learning were expressed and illustrated (Brinkerhoff, Stage 3).

The second principle in effective professional development is professional development efforts focus on both the individual and the organization. Change at both levels is desired. This is evident in the training for building data managers in that the data managers themselves acquired new knowledge and skills (Brinkerhoff, Stage 3), but that the organization and the impact of that training in the work with the building trio and the building staff was the end goal (Brinkerhoff, Stage 6).

The third principle of effective professional development is that small changes are guided by vision. Incremental steps toward a vision that focuses on learning and learners allows those involved in professional development to see beyond any one
effort, keeping the bigger picture in mind (Guskey & Peterson, 1996). The change that is desired is large scale, but it is attained by a series of small steps (Guskey, 1995; Gephart, 1995). This is evident in the training for building data managers in that the ultimate goal of their training is to, in the end, increase student achievement and learning. Year 1 training was an incremental step toward this vision, which will be realized at the end of Year 2.

And finally, the fourth principle of effective professional development is that it is ongoing and procedurally embedded. When operationalized in this way, professional development becomes part of an educator’s everyday activities. This was reflected in the fact that the training sessions all took place during the work day, the site visits occurred at the school buildings where the data managers worked, and technical assistance was always available. Rosenholtz (1989) identifies four requirements in order for professional development to become part of an educator’s everyday activities. These are: time for teachers to work together with colleagues during the school day as well as extended time to learn and use new skills in the classroom; involvement in decision-making; a belief that it is acceptable to ask for help as well as give it to others in order to improve practice; and teacher and administrative collaboration in order to clarify goals, objectives, processes and outcomes. All these requirements were evident in both the training and the expectations that data managers work with teachers during the school day in using their data to inform classroom instruction. Questions were encouraged during the training sessions and through on-going technical assistance. Collaboration in data-driven decision-making processes is expected at the school and district level.
Professional development must now be viewed as essential and must evolve to include opportunities to reflect and solve problems collaboratively, converse with colleagues, develop a school culture which supports collaboration, involve peer observation and coaching, focus on work with students and be on-going (Livneh and Livneh, 1999). In light of this, collegiality becomes extremely important. Collegiality signifies a shift in education, where autonomy and isolation from other professionals was the norm. Little (1982, 1989, 1993) noted that successful schools exhibited a “norm of collegiality” as well as a “norm of continuous improvement.” Little also suggested that there must be group involvement, rather than the involvement of individuals in the implementation of new practices. Hargreaves and Dawe (1989) suggested the concept of a collaborative culture supported by leadership. Both Hargreaves and Dawe (1989) and Little (1989) caution against the use of contrived or mandated collegiality which can result in undermining the development of a collaborative culture. In 2000, the National Staff Development Council conducted a study which examined the professional development programs at eight public schools which had registered measurable gains in student achievement. In all of the schools, staff development activities had shifted from isolated learning opportunities and occasional workshops to focused, on-going learning based on collaborative reflection and joint action (WestEd, 2000). The professional development expectations and requirements in *Reading First-Ohio* are intense and the expectation for collaboration with regard to the effective use of data is high. Data managers are expected to communicate data clearly and effectively in order for use of the data to lead to organizational change (Brinkerhoff, Stage 6).
Although considerable information concerning the structure and organization of professional development in education exists, relatively little systematic research has been conducted on the effects of professional development on improving either teaching or student outcomes (Sydow, 2000; Garet, et al, 2001). There are, however, a few studies which inform this study of training which was developed for the data managers in Reading First-Ohio.

The U.S. Department of Education conducted a national evaluation of the Eisenhower Professional Development Program. This evaluation focused on 300 teachers in a longitudinal study which looked specifically at the types of professional development activities offered in the Eisenhower program and the impact of each type. The evaluation utilized a national profile through a probability sample, case studies from ten school districts (two in each of five states), and included a longitudinal study, which focused on thirty schools (three schools in each of the ten case study districts). The evaluation looked primarily at whether the professional development was a traditional type (workshop, conference, etc.) or a reform type (study group, coaching, mentoring, etc.), the duration of the professional development and the extent to which groups of teachers from the same school, subject area, or grade level participated. Data was collected through a survey of teachers. The evaluation found that professional development which focused on higher order teaching strategies increased teachers’ use of those strategies in the classroom, especially when the professional development is a reform type (i.e. a study group, coaching, mentoring, etc.) as opposed to a traditional type (workshop, conference, etc.). The study also found the effect to be higher when the professional development
offered opportunities for active learning, was aligned to other activities and goals and involved other teachers from the same school, subject area or grade level. Professional development within this study varied in quality from year to year and was perceived differently, even within the same school, by different teachers. The study found that the positive effects of professional development on classroom practice could be increased if districts/schools provided a consistent, coherent plan for professional development of teachers.

Garet, et al used a probability sample of 1,027 math and science teachers involved within the same national evaluation of the Eisenhower Professional Development Program, which supports professional development for teachers. This study provided the first large-scale empirical comparison of effects of varying characteristics of professional development on teachers’ learning. An ordinary least squares regression design revealed that three features have significant positive effects on the increase of knowledge and skills among teachers as well as changes in classroom practice. The first of these factors was that the professional development focused on content knowledge. The second was that the professional development activity provided opportunities for active learning among participants. The third significant factor was that the professional development aligned coherently with other learning activities (i.e. state standards, other district/building initiatives, etc.). The structural features of the professional development which significantly affected teacher learning were the form of the activity (i.e. workshop or study group); whether a group of teachers from the same school participated in the activity, either from the same school, subject-area, or grade level; and the duration of the activity.
These two studies were particularly applicable in the examination of the training of data managers in *Reading First-Ohio* in that they looked at traditional forms of professional development (i.e. workshops, institutes, etc.) in comparison with “reform” types of professional development activities (i.e. study groups, coaching, mentoring, etc.). In these studies, reform activities typically took place during the school day and some, such as coaching and/or mentoring, took place in the context of the classroom. Reform activities were viewed as being more responsive to the way that teachers tend to learn and may have more impact on changing practice.

As indicated before, the training for data managers provided a combination of traditional workshop opportunities for learning offered during the school day combined with individual technical assistance and site visits, comparable to a coaching/mentoring model.

Another study of note was by Gonzales, et al (2002) regarding the Regional Educational Technology Assistance Program (RETA) in New Mexico and the effect on teacher practice. This study found that through participation in RETA, teachers increased their use of technology in the classroom, increased their use of constructivist practices in the classroom, increased their collaboration with other teachers and assumed more leadership positions. RETA focused efforts in high-poverty schools, as does Reading First. Teachers involved in RETA substantially changed their use of technology both in school and at home. They also increased their collaboration with other teachers with regard to technology. This could be of interest in *Reading First-Ohio* if increases in collaborative practices regarding data use were examined using similar collaborative practice indicators (i.e. assisting with
use of data; assisting in designing curriculum which utilizes data; assisting teachers in brainstorming/discussing issues related to data use). At the present time, data use and access are studied, but not the collaborative practices in use during the process of data utilization.

Another study (Sydow, 2000) although conducted in colleges and universities, speaks to the preference of short-term, focused meetings such as conferences, workshops and seminars. A stated implication for practice was that discipline-based peer group conferences are preferable, such as those planned and conducted for the data managers in Reading First-Ohio. Face-to-face meetings were desirable, although it was recognized that technology could be employed to minimize costs associated with face-to-face meetings. This is congruent with the threaded electronic chats and discussion forums which will be implemented, in addition to the face-to-face meetings for data managers for Year 2 training for Cohort 1 and Year 1 training for Cohort 2.

Supovitz and Turner (2000) conducted a study employing hierarchical linear modeling techniques to study professional development as a means of improving student outcomes in science. The study was conducted utilizing data from a National Science Foundation Teacher Enhancement program called the Local Systemic Change initiative and included 666 schools. Examination at the individual teacher level indicated that content preparation exerts influence on classroom practice and culture. At the school level, it was found that the socioeconomic status of the school was found to influence practice more substantially than either the supportiveness of the principal or the availability of resources. The results of this study, although
specific to the use of inquiry-based teaching practices in science, raise questions about whether similar exploration of the link between professional development and reform-based efforts such as Reading First in reading or inquiry-based data examination and use of data in changing teacher practice could be explored.

Two studies by Mebane and Galassi (2000, 2003) focused on professional development school partnerships between higher education institutions and local schools. Many of these professional development school partnerships are geared toward collaborative approaches of research between university faculty and school personnel. Few empirical studies have been conducted to document the impact of these collaborations on participants or impact (Mebane & Galassi, 2003). Within the professional development school model, small groups are formed around particular topics of interest and participants self-select their small, collaborative group membership. Participants completed three questionnaires, two of which rated team learning and processes. The other rated leadership behavior. Using a hierarchical regression analysis, the study primarily explored team and organizational learning outcomes. Results indicated that team learning could be accounted for by group leadership and group process (i.e. collaboration, cohesion, etc.). An additional analysis of variance sought to reexamine the effect of group size, found in the 2000 study conducted by the authors. It was found that mid-sized groups had higher levels of perceived team learning than did either extremely small or extremely large groups. Within Reading First-Ohio a collaborative structure between higher education and school districts/sites is utilized in the professional development for literacy specialists and classroom teachers. It is possible, especially within years 2 and 3 of
implementation, that the conclusions of this study could be useful in structuring learning opportunities for these groups that would be geared toward individual needs and interests (data managers also participate in these professional development activities at their school sites).

Another study which included a collaborative process/structure between higher education with state and district personnel involved in business education within the school-to-work model/effort (Eisenman, 2003). The goal of the professional development was to increase the use of integrated learning experiences in vocational education. Teachers created instructional projects throughout the school year as a result of their participation in summer institutes and on-going professional development. The teachers completed projects which served as culminating activities of their involvement in the professional development. The projects addressed workplace issues, content standards and workplace skills. Teachers were paid an $800 stipend for their full-year involvement. Additionally they received university credit and could request $125 for instructional materials related to their projects as well as $200 for travel related to sharing their projects/learning at local or regional conferences.

Four school-based teams participated in this study. On-going interviews as well as document analyses were conducted throughout the year. The interview data indicated that teachers experienced shifts in their thinking about integrated learning experiences first as accomplishing the academic goals of the schools, then in viewing of integrated learning as a vehicle for stressing the importance of teamwork to students and finally to valuing the possibilities of student-directed learning and
inclusion which can result from integrated learning opportunities. This transformation of thought and practice could offer design possibilities for documenting the transformation of teacher thought and adult learning discussed in previous sections of this review of literature.

Another study which examined the change process at work in teachers’ thoughts and practices was conducted by Franke et al in 2001. This study focused on generative change in teacher thought and practice through the use of cognitively guided instruction in math. All teachers (n=22) exhibited use of cognitively guided instructional practices in the classroom after the conclusion of their training and ten of the teachers continued learning and generative growth in the ways that they viewed children’s thinking as central; the possession of detailed knowledge about the thinking of children; the characterization of development of children’s thinking about math; perception of themselves as creating and extending their own knowledge about children’s thinking; and their seeking of colleagues for support who also possessed similar knowledge about children’s thinking. Twenty-two teachers participated in interviews and classroom observations. Classroom observations consisted of the observer audiotaping and documenting interactions between teacher and students. Interviews were conducted within two hours of each observation and were not scripted but framed by a list of questions. Observations were coded using a scale which classified the levels of engagement with math thinking the teacher exhibited in his/her interactions with children. Additionally, observations and interviews were coded for three themes (specificity of student thinking, use of structures to organize knowledge of student thinking and engagement in creating knowledge about student
thinking). Exemplars of generativity were identified. The study found that all twenty-two of the teachers maintained some level of Cognitively Guided Instruction, yet nine of the teachers were able to maintain high levels even four years after the professional development ended. The study highlighted how teachers’ own conceptions of their own learning as well as those of their students’ learning impacted their teaching. This study could be used as a foundation for thinking about transformational change in Reading First-Ohio teachers as discussed in the section of this literature review focusing on adult learning theory.

DATA-BASED DECISION MAKING IN EDUCATION

Data-based decision making has gained momentum in recent years in education as accountability has risen and expectations for student achievement have increased. School districts have collected student achievement data for many years, but there have been few efforts to interpret and work with the data in any concerted way (Johnson, 1997). There are several reasons why educators do not use data more systematically: lack of access to the data; lack of technical expertise in manipulating data; lack of analytical training; lack of training in developing action plans based on data (Cromey, 2000; Mason, 2002) and lack of time (Holcomb, 1999, p. 22). Also contributing to difficulty educators have in using data is the lack of understanding of a comprehensive picture of all of the data that is available within a school.

In Reading First-Ohio, through the training of building data managers, lack of access of data is removed as a barrier as the data manager is specifically trained in the
access and presentation of data (Brinkerhoff, Stage 3). Data managers acquire the technical expertise to manipulate the data, removing this as a barrier for teachers and administrators (Brinkerhoff, Stage 6). Data managers also gain analytical training so that data may be understood and displayed in a format that is accessible to building-level staff (Brinkerhoff, Stage 3, 4, 5, 6). “Accurate, understandable and useable information must be provided” so that members of the school community can interpret assessment scores and connect them to the teaching and learning process (Northwest Regional Educational Laboratory, 1998). Throughout the training, data managers gain a comprehensive picture of all the data that is available through the student assessment system in Reading First-Ohio. This data is the focus of all training sessions (Brinkerhoff, Stage 3), as new and different pieces of information are understood within the total assessment system. The lack of time is removed as a barrier since data managers are assigned quarter time to any one building solely for the purpose of managing the school’s data. And finally, to combat the barrier that schools often lack the training to develop effective processes for using data to drive instruction, data summits have been instituted which allow school teams to develop data-based plans with the support of facilitators from the Ohio Department of Education as well as the Reading First-Ohio Center for Professional Development and Technical Assistance.

Bernhardt (1998, 2003) suggests that there are ten levels of data in a school. The first is snapshots of measures. This includes descriptive data about the school such as enrollment, attendance, grade level, ethnicity, gender, and languages spoken. Also included at this level are measures of student learning such as achievement test
data, grades, grade level assessments and authentic assessments. Perceptions about the learning environment held by staff, parents, students or the community can also be present at this level. And finally, in this first level, data about school processes such as programs, classroom practices and instructional strategies are sought. In \textit{Reading First-Ohio}, the TerraNova and the Texas Primary Reading Inventory would be measures that would fall in this category. Data managers have been trained to collect, handle, enter and clean data from the TPRI as part of their training process (Brinkerhoff, Level 3). Additionally, data managers have cleaned and will eventually handle data from the TerraNova. Furthermore, data managers have been trained to represent data from the TPRI and eventually the TerraNova in easy to access formats for building level staff (Brinkerhoff, Levels 3, 4, 5).

The second level of data, according to Bernhardt (1998, 2003), are measures over time. The above measures are still considered, but they are done so over a number of data points. Change over time is examined. An example of this type of data in \textit{Reading First-Ohio} is the DIBELS data. This assessment is used at least three times during the year to assess student progress toward appropriate benchmarks. Data managers have been trained to collect, handle, clean and enter DIBELS data, both into the state system and into the DIBELS Data System (Brinkerhoff, Stage 3). Data managers have also been trained to represent and communicate this data so that building staff can understand the data and use the data to make instructional decisions (Brinkerhoff, Levels 3, 4, 5, 6). This is part of a process where “assessment is viewed as being less about sorting and selecting and more about offering information on which students and teachers can build. As assessment and instruction are more
closely linked, achievement measurement will be integral to learning rather than imposed by some external shaper of students’ fates” (Glaser and Silver, 1994, p. 26). The data manager is critical in this discussion, serving as the provider of assessment information about which discussions can occur, upon which decisions can be built, and teaching and learning can improve (Brinkerhoff, Stages 5 and 6).

The third and fourth levels involve cross-tabulating data within measures examined. The third level is cross-tabulation within a single measure, and the fourth level is cross-tabulation within a single measure over time. At the present time, data managers have been trained to cross-tabulate data at both levels. The TPRI data has been cross-tabulated as well as single administrations of the DIBELS, but since there are multiple administrations the DIBELS assessment during the course of the year, this data has been cross-tabulated over time (Brinkerhoff, Levels, 3, 4, 5, 6).

Bernhardt’s levels five through ten look at various levels of interaction of variables over time. The levels vary by the number of measures that are considered in the interaction. At this time, data managers have only a few measures to cross-tabulate, but for next year, as outcome data is available, they will have multiple assessments, administered multiple times, and this information will be used to take a comprehensive look at individual students and groups of students over time.

A leadership team must often convince the school that using data has merit (Johnson, 2002). Whether it is key staff members or the principal, leadership is essential to the use of data within a school, as resources, time, support and direction are critical (Mason, 2002). Someone, preferably a team of people, must assume the responsibility for the data process. Although the team could be expanded, this team,
in *Reading First-Ohio* schools, is composed of the principal, literacy specialist, resource coordinator and data manager. Within this team, the data manager has the responsibility to represent and communicate data about student reading assessment results and achievement, in a format that is easy to understand (Brinkerhoff, Stages 4, 5, 6). The establishment of clear roles and responsibility in the use of data to improve learning is necessary and contributes to the overall effectiveness of the leadership team (Johnson, 2002).

Due to accountability, schools often rush to make decisions based on data, and in this haste, they institute the wrong solutions because they have failed to understand the issue or problem at hand. Abuses of data often occur as schools rush to institute a solution without discussion of the philosophical underpinnings that support a given solution or without an examination of research indicating that the given solution is well-grounded in solid theory and practice. What is missing in this situation is an inquiry process—a data-driven dialogue. School teams should be encouraged to investigate questions of need and interest and to use data to answer these questions. In order to do this, a professional culture which supports this type of dialogue must be built (Love, 2003). Collaborative structures must exist within a school so that educators can engage in data-driven dialogue and inquiry. “Data-driven dialogue requires that participants practice norms of collaboration and gain skills in data analysis” (Love, 2003, p. 16). This collaborative inquiry process is most evident at Brinkerhoff, Level 6. Data summits throughout the year with Year 2 schools and districts will continue so that teams have the opportunity to look at the data, develop collaborative plans, and use the data to drive instruction, all with support. All sources
of data must be part of the dialogue so that a complete picture can be established. These sources of data should include traditional sources of data, such as student achievement results and common grade level assessments. When looking at this type of assessment data, summary reports should be considered as well as disaggregated results, item or cluster analysis results as well as student work.

But often overlooked are non-traditional sources of data which might include attendance data, graduation rates, enrollment in higher-level courses, participation in extra-curricular activities, survey/questionnaire data, and data that is gained through interviews or focus groups. Comparing teachers’ responses to questionnaires or surveys and responses of students to similar questionnaires and surveys can yield interesting results. “Comparing teachers’ responses with questions about instructional techniques to students’ answers to the same questions made some team members wonder if student and teacher had been in the same classroom. Students might say they didn’t use computers in their math classes, while teachers reported that computers were used frequently” (Hamilton, 2003, p. 28). In Reading First-Ohio, a comprehensive system of data has been built. Data managers are responsible for the student level data acquired through reading assessments. This includes individual student results, group results and results from disaggregated subgroups, available through EMIS. Data managers also incorporate attendance into the data record for each student for each assessment period. Other sources of data existing within Reading First-Ohio are data from the Survey of Enacted Curriculum (Council of Chief State School Officers), which offers information about standards-implementation to teachers based on their responses to an electronic survey. The
ELLCO (Early Language and Literacy Classroom Observation) is used to assess the environmental elements evident for the support of literacy within individual classrooms and aggregated at the building level. Attendance from professional development sessions as well as information from the Program Monitoring Tool, which measures compliance and implementation, are all available sources of data which can be used by the building-level team in order to assess the overall picture of the building. Support is offered through the data summits so that teams acquire the knowledge and skills to use this data to inform the school improvement process.

A collaborative inquiry process should include a continuous cycle of framing questions, collecting data, analyzing data, organizing data-driving dialogues, drawing conclusions and taking action, and monitoring results (Gordon, 2003). Performance targets must be set and they must be specific and measurable (MPR Associates, 1998). Within Reading First-Ohio, data that provides one-time views (TPRI, TerraNova) and data that provides longitudinal views of student learning (DIBELS and single assessments such as the TPRI and TerraNova over multiple years) is available. Groups of educators that are most successful with instituting an inquiry process recognize that data are not perfect, but typically they are more than what they possessed before for decision-making purposes. An inquiry process which incorporates the forming of hypotheses related to the data is most effective so that disparate pieces of data can be used to corroborate or disprove a particular hypothesis. Educators must also recognize that there may be gaps where more data is needed. Problem-solving methods to gather more accurate data is often part of the process.
Effective groups recognize that learning the process having data-driven dialogues is as important as having perfect data to work with.

Presenting data in a useful format is a skill that must be acquired by those who are charged with helping colleagues read and use data to improve student achievement. This is precisely the area where building data managers have received training (Brinkerhoff, Level 3). Jerald (2003) suggests that educators should begin with simple statistics such as averages and percentages, then move to representing longitudinal data through the use of line graphs, disaggregating results in ways that make sense to a particular school site. This might include racial subgroups or other groups which are of interest to educators at a school (i.e. special education, socio-economic status of students, etc.). Following the disaggregation of groups, educators should then cross-tabulate the disaggregated data into meaningful chunks. An example of this would be that reading scores are disaggregated by socio-economic status into two groups: those who qualify for free and reduced lunch and those who do not. If a gap exists between these two groups, data then may be cross-tabulated to see if the students are taking advantage of different opportunities which may contribute to the gap. For example, educators might ask if students from both groups are equally qualifying and enrolled in after-school intervention opportunities. All of these practices have been incorporated into the present Year 1 training and will continue into future training efforts. But, “for educators, having a foundation in data analysis and assessment is necessary, but not sufficient for them to effectively synthesize assessment data at the school level. They also need a process for using these data, which supports ongoing continuous improvement” (Cromey, 2000, p. 3).
Process training has started in *Reading First-Ohio* in Year 1 and will continue into and through Years 2 and 3. While expectations for data managers and their role in this process have been established (Brinkerhoff, Stages 5, 6), it is clear that this area will become one of the areas of focus for next year’s training.

**SUMMARY**

This chapter reviewed the literature which is pertinent to this study. Chapter 3 will present the design and methodology of the study including the methods for data collection. Chapter 4 will present the findings of the study. Chapter five will present a summary of the study, the conclusions of the study, the limitations of the study and implications of the study in terms of policy considerations, further research and implications for practice.
CHAPTER 3

DESIGN AND METHODOLOGY

OVERVIEW

The training developed and delivered for building data managers in Year 1, Cohort 1 of the Reading First-Ohio project follows the Brinkerhoff model for evaluating human resource development (Brinkerhoff, 1987). This model is based upon six stages of evaluation. This model and evaluation design was chosen because it is cyclical and is appropriate for use in Reading First-Ohio training of building data managers due to the anticipated changes that will occur with the data collection and management system during and after Year 1, Cohort 1. It is important to determine whether the system of training is working or if revisions are necessary. Finally, the use of the data for instructional decision-making is critical within this program since buildings and districts could lose funding if student progress is not realized after two years. Expectations for data use become greater in the second year. Student progress will be defined and determined by the student data which is collected. Data which is correct, understood and used in decision-making is essential in Reading First-Ohio.
THE DATA MANAGER AND THE NUMBER OF BUILDINGS SERVED

Of the twenty nine data managers, seven serve four buildings; four serve three buildings; eight serve two buildings; and ten serve one or less building (in one building, the data manager’s role is split between two individuals). They serve a total of sixty five buildings in twelve districts. The districts are evenly split between rural/small city districts and urban districts. Eleven data managers serve in rural/small city districts and eighteen data managers serve in urban districts.

SELECTION OF SUBJECTS

Any person employed as a data manager in a school building participating in Reading First-Ohio in Year 1, Cohort 1 is a potential subject. The nature of the research and study was fully explained to potential subjects and all elected to participate. There are 29 data managers in Year 1, Cohort 1. For the first training, one data manager was not yet hired, but was hired by the second training and participated in the second training as well as in the evaluation. In December, one data manager retired and a replacement was not hired until late February. Since the replacement data manager did not attend the trainings, she was not asked to participate in the study.
DESCRIPTION OF SUBJECTS

All data managers were in their first year of their position, since the position did not exist prior to Reading First-Ohio. Of the data managers, 86% were educators and 14% were from fields outside of education. 90% of the subjects were female and 10% were male. Years of experience are detailed below on Table 2.

<table>
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<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
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</thead>
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<td>34.00</td>
<td>19.2381</td>
<td>10.71403</td>
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</tbody>
</table>

Table 2: Years of Experience for Subjects

Prior to becoming data managers, 41.6% held support positions (Title I teachers, Reading Recovery teachers, coaches, etc.), 37.5% held classroom teaching positions, 16.7% held positions outside of education, and 4.2% held administrative positions.

EVALUATION DESIGN

Brinkerhoff’s evaluation design for human resource development was selected as a model (Brinkerhoff, 1987). Evaluation is conducted at each of six stages. The evaluation design is cyclical and is appropriate for use in Reading First-Ohio training of building data managers due to the anticipated changes that will occur with the data.
collection and management system during and after Year 1, Cohort 1. It is important to determine if the training design followed is effective so that revisions can be undertaken for Year 2, Cohort 1 and Year 1, Cohort 2 training during the 2004-2005 school year. An illustration of Brinkerhoff’s model follows.

**Figure 1:** Brinkerhoff’s Six Stage Evaluation Model

![Brinkerhoff's Six Stage Evaluation Model](image)

In Stage 1, the critical question asked is whether a need for human resource development exists. Obviously, in _Reading First-Ohio_ it is necessary to train data managers to enter data, maintain the data collection system at their building, and represent and analyze data for use by building staff to make decisions at the student, classroom, building, district and program levels. The need for human resource development represents opportunity, as districts qualify for substantial funding awards ranging from $197,530 to $5,085,822 for Year 1. The need for human
resource development also represents new direction for these districts, as they are among the twenty-seven lowest performing districts within the state of Ohio.

In Stage 2, the critical question asked is how to produce the needed skills and knowledge among the building data managers. Training development represented input from many who are working within the program at the state staff level and at the Reading First-Ohio Center for Professional Development and Technical Assistance. The Center is a consortium of three universities (Cleveland State University, John Carroll University and the University of Akron). The Center supports the training of the data managers as well as conducting professional development and technical assistance for other aspects of the Reading First-Ohio program.

In Stage 3, the critical question asked is whether the installation of the program design occurred as well as monitoring operations for revisions. This stage is evaluated through the use of session evaluations and attendance. The session evaluation was designed to inform trainers what participants found valuable and gain suggestions for future training and modifications.

In Stage 4, critical questions asked are who is learning what? Is the program accomplishing its immediate intended learning outcomes? Are there unintended results? If so, what are they? These questions are evaluated through the use of knowledge assessments at training sessions, as well as performance assessments at the training sessions. A topic and process grid was developed for each training and was used in the development of the knowledge assessment. The knowledge assessment for training 1 was evenly distributed across knowledge, comprehension
and application. The knowledge assessment for training 2 focused heavily on application, as the training focused on data analysis, application and use within the instructional program.

In Stage 5, the critical question asked is whether training is used on the job correctly. If it is not, what is the corrective action? Data which are used to answer this question are obtained through site visits and the observation checklist, data entry, data representation through analysis of artifacts, and interviews with data managers. In this stage, evidence of a process for using assessment data is explored, for “when this process is absent, confusion reigns (Cromey, 2000, p. 3).

In Stage 6, the critical question is whether the organization has benefited due to the human resource development. This data will be gathered through the use of questionnaires to literacy specialists, resource coordinators, and building principals.

**RESEARCH DESIGN AND DATA COLLECTION**

The dynamics of implementing a new program are complex, especially one with a great deal of federal dollars involved. Because of the importance of the data within the Reading First-Ohio program and because funding is dependent upon the collection and use of good quality data, a primarily quantitative design was selected which could ascertain the efficacy of the training. In addition to the quantitative design, additional data will be collected through interviews with building data managers to guide planning efforts for future training.
Stage 1, 2, 3: Attendance and Session Evaluations

In Stages 1 and 2, the evaluation produces decisions which are tested at later stages. In Stage 1, the determination of need for the human resource development was established and in Stage 2, the content of the human resource development was established after expert feedback. In Stage 3, session evaluations and attendance data will be used to determine the installation of the program design and monitoring the training for revisions. Attendance will be established by computing a percentage of data managers who attended the trainings. The session evaluation form asks training participants to rate each topic presented on a semantic differential scale. Other aspects of the training are also rated (competence of the presenters, quality of materials, visual presentation). Mean scores are computed for each area and for the overall evaluation.

Stage 4: Knowledge Assessments and Performance Assessments

In Stage 4, the evaluation is to determine which participants are learning what material and whether the training program has accomplished its immediate intended learning outcomes. To evaluate training in this stage, a knowledge assessment was developed for each training session and a performance assessment was conducted in a laboratory setting. Each knowledge assessment consisted of twenty-five multiple choice items which directly relate to the topics covered in the training session. Since the items were not scored dichotomously, Cronbach’s coefficient alpha was used to establish internal consistency and reliability of the instruments.
For the first training session, a topic and process grid was established and questions were evenly distributed over knowledge, comprehension and application domains. This topic and process grid was used to establish the content validity of the instrument. The training session consisted of factual information over topics such as background of the Reading First-Ohio program, the roles and responsibilities of the building data manager, data management and the research component of the program. The participants were also trained on the use of the spreadsheet established for the collection of student-level data and practiced data entry with the spreadsheet. After participants were trained to enter the data, a performance assessment was conducted. Participants were given ersatz data to enter onto the spreadsheets and after ten students were entered, ten percent of the data was checked for accuracy.

Null Hypothesis 1: There is no relationship between participants’ scores on knowledge assessment 1 and performance assessment 1.

The second training session focused heavily on data analysis and application. The knowledge assessment also focused heavily on application and use of the data for decision-making. A topic and process grid was established for this training session to establish the content validity of the knowledge assessment instrument. The majority of this knowledge assessment focused on the application of knowledge to student assessment results. After receiving participant feedback from the first training session through the session evaluation form, participants were asked to bring one classroom of student data to enter rather than using ersatz data. The participants were trained to use the data collection spreadsheets specifically established for progress monitoring data. After training, the performance assessment was conducted. Participants entered student data for ten students and ten percent of the data was
checked for accuracy for the performance assessment. For both training sessions, the knowledge assessments and the performance assessments were correlated using a biserial correlation. The biserial correlation was chosen as a method of examination because it was desirable to explore the strength of the relationship between the knowledge assessment and the performance assessment when one variable is dichotomous (the performance assessment).

Null Hypothesis 2: There is no relationship between participants’ scores on knowledge assessment 2 and performance assessment 2.

Null Hypothesis 3: There is no relationship between participants’ scores on knowledge assessment 1 and knowledge assessment 2.

Null Hypothesis 4: There is no relationship between participants’ scores on performance assessment 1 and performance assessment 2.

Stage 5: Site Visit Observation Checklist and Interviews

In Stage 5, use of the training on the job was examined. Site visits were conducted and data was collected using an observation checklist following the training. In the first field checklist, security of data was assessed (computers are protected by passwords, hard copies of data are secured). The timeliness of data submission was assessed, a method of cross-checking data for accuracy was assessed, as well as the process for sharing data with building staff. Documentation of data entry (logs, field notes was also assessed). After the visit, each area was ranked with a “2” (met expectations), a “1” (partially met expectations) or a “0” (did not meet expectations). Additionally, the accuracy of the data submission was assessed using the same 0-2 scale. Total scores could range from 0-12.
The second field checklist examined four factors and ranked each factor using a “3” (exceeds expectations), a “2” (met expectations), a “1” (partially met expectations) or a “0” (did not meet expectations). The rationale for including the “3” for this field checklist but not for the first is because in the areas assessed, data managers can exceed expectations for frequency, quantity or creativity. The areas examined were the frequency of trio meetings (i.e. data sharing sessions), the frequency of communication with the principal regarding data, the visual representation of data through charts, graphs or reports and the frequency of communication of data with building staff other than the trio. Additionally, the checklist also included an item rating the accuracy of the data submission. Since scores on this item could not exceed expectations, the range of scores was 0-2. Total scores on the field checklist could range from 0-14 including the assessment of the accuracy of the data which was submitted to the Ohio Department of Education. This stage of the process is extremely important, as “having a foundation in data analysis and assessment is necessary, but not sufficient for them (educators) to effectively synthesize assessment data at the school level. They also need a process for using these data, which supports ongoing, continuous improvement” (Cromey, p.3).

The site visit scores were correlated with the scores from the knowledge assessments and the performance assessments from Stage 4. The correlation was chosen as a method of examination because it was desirable to investigate the relationship between the knowledge assessment and the field performance, as well as exploring the relationship between the performance assessment and the field
assessment. Also evaluated at Stage 5 is the accuracy of the data entered once it is received at the Ohio Department of Education (rated “2” (met expectations); “1” (partially met expectations); and “0” (did not meet expectations)).

Null Hypothesis 5: There is no relationship between participants’ scores on knowledge assessment 1 and on field checklist 1.

Null Hypothesis 6: There is no relationship between participants’ scores on knowledge assessment 1 and field checklist 1.

Null Hypothesis 7: There is no relationship between participants’ scores on knowledge assessment 2 and field checklist 2.

Null Hypothesis 8: There is no relationship between participants’ scores on performance assessment 2 and field checklist 2.

Null Hypothesis 9: There is no relationship between participants’ scores on field checklist 1 and field checklist 2.

Standardized open-ended interviews with data managers were conducted in May 2004. It was explained to data managers that participation in the interview was optional and that their responses would as a part of this research project. Patton (1990) states that interviewing provides the opportunity “to find out what is in and on someone else’s mind” (p. 278). A thirty minute standardized open-ended interview provided the opportunity to cover the same topics in the same order with each data manager. The strengths of this type of interview, according to Patton, are increased comparability of responses and simplified analysis and organization of the data. This type of interview also minimizes “interviewer effects” (p. 285). This is particularly important in this study since the interviewer has an existing relationship with those being interviewed. The interview was conducted by telephone at a time convenient for the interviewee.
The interview protocol was established with feedback from state staff involved in the Reading First-Ohio program and was piloted with two data coordinators in districts who attended training and who coordinate the work of data managers in two districts, but who are not part of the study. The primary purpose for the pilot was to confirm the thirty minute time limit and to provide opportunity for the interviewer to practice with the protocol. Interview questions were refined based on the feedback from the pilot. Data from the interviews was analyzed cross-case and coded for themes, which were then used to elaborate and enhance quantitative data and results previously collected and examined during the evaluation and to further inform the planning of the training for Year 2. N6, the most recent version of NUD*IST, was used for analysis of the interviews.

Stage 6: Questionnaires for Data Managers and Data Consumers

In Stage 6, the organizational benefits of the training were assessed. The organizational benefits of the training were assessed through the use of questionnaires which were developed for the data managers and for the literacy specialists, the resource coordinators and the building principals (i.e. data consumers). The questionnaires are a combination of items scored with a dichotomous scale and those that are not. With a multiple item, mixed rating scale instrument such as this, the Cronbach’s coefficient alpha is the appropriate measure of internal consistency. Face validity of the questionnaires was established with feedback from several people from the Reading First-Ohio staff, as well as from the Reading First-Ohio Center. The questionnaire for the data managers was piloted with two individuals who have
attended the trainings and who serve as data coordinators in their districts who are not part of the study. The questionnaire for the literacy specialists, resource coordinators and principals was piloted with two district coordinators who are involved with the professional development and training, but will not be part of the study. Respondents were asked to complete questionnaires at a meeting where they were all present. Questionnaires were color coded by role (literacy specialist, resource coordinator and principal), group (whether the data manager served two or less or three or more buildings) and numerically coded for data entry. The nature of the research was fully explained as well and that the completion of the survey was voluntary. The completion of the questionnaire indicated the willingness of the respondent for his/her questionnaire to be included in the research.

Mean scores by role were computed. Initially, graphic representation of the data was done using box plots to for exploratory purposes in order to determine the shape of the distributions for each role and to examine the spread of the scores and any outliers. The data for each role (data manager, literacy specialists, resource coordinators and principals) was examined as two groups: the first group was determined by whether the data manager serves three or more buildings; the second group was determined by whether the data manager serves two or fewer buildings. This grouping provided information on whether organizational benefit of the training of those in the role of data managers was impacted by the number of buildings served. If a data manager served three or more buildings, then he/she is typically only in a building once per week. Eleven data managers serve three or more buildings. If a data manager served two or fewer buildings, he/she could be in any particular
building more than once per week. Eighteen data managers serve two or fewer buildings. The data was examined to see if it differs significantly between these two groups.

Assuming a normal distribution, homogeneity of variance and independence of scores, an analysis of variance was performed (Bluman, p. 545). An analysis of variance was an appropriate statistical technique used to compare variance between group means. Normality was tested using the Shapiro-Wilk test of normality. Homogeneity of variance was tested using Levene’s test of homogeneity of variance. A distribution that is not normally distributed was possible due to the small sample sizes in the two groups of data managers (11 and 18). If a normal distribution was not present, then nonparametric tests would have been performed comparing median scores.

Scores were entered into the Statistical Package for the Social Sciences (SPSS) for analysis. The collected data was used to test the following null hypotheses:

Null Hypothesis 10: There is no difference in the population of scores between the data managers who serve three or more buildings and those who serve two or less buildings.

Null Hypothesis 11: There is no difference in the population of scores between roles of data consumers served by data managers who serve three or more buildings and those who serve two or less buildings.
SUMMARY

This chapter gave an overview of the evaluation model used and a description of the subjects involved in this study. This chapter also described methods used in gathering and analyzing data collected at each stage of the evaluation model. Chapter 4 will present the findings of the study. Chapter 5 will present a summary of the study, the conclusions of the study, limitations of the study and suggestions for further research and implications.
CHAPTER 4

RESULTS OF THE STUDY

Results of the research are presented in this chapter. The presentation will follow the stages of the evaluation model which was used to conduct the study. Null hypotheses are used to organize the data analysis under each stage of the evaluation model.

Stage 1

In Stage 1, the critical question asked was whether a need for human resource development exists. In Reading First-Ohio it is necessary to train data managers to enter data, maintain the data collection system at their building, and represent and analyze data for use by building staff to make decisions at the student, classroom, building, district and program levels. Due to the large amount of money involved in the project and since the position of data manager existed in all funded schools, it was determined that a need for human resource development did exist.

Stage 2

In Stage 2, the critical question asked was how to produce the needed skills and knowledge among the building data managers. The development of training
represented input from many who are working within the program at the state staff level and at the *Reading First-Ohio* Center for Professional Development and Technical Assistance.

**Stage 3**

In Stage 3, the critical question asked was whether the installation of the program design occurred as well as monitoring operations for revisions. This stage was evaluated through the use of session evaluations and attendance. The session evaluation was designed to inform trainers what participants found valuable and gain suggestions for future training and modifications. Between sessions 1 and 2, several suggestions for future trainings were incorporated into the following sessions. For example, data managers asked to work with their own school data rather than the *ersatz* data they worked with for the first training. For the second training, they were asked to bring at least one classroom set of data with them. Additionally, participants asked for training sessions to be held regionally, and for training sessions 3 and 4, they were held in regional sites. Attendance for all training sessions was 100%. Participants were asked to rate the contents of each training using a semantic differential scale (1-5). Table 3 presents session evaluation information for training sessions 1 and 2 and Table 4 illustrates session evaluation information for sessions 3 and 4.
### Table 3:
Session evaluation for fall data manager training sessions (sessions 1 and 2).

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<thead>
<tr>
<th>Session Evaluation Item</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Stand. Deviation</th>
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<td>Presentation 2: Role and Responsibility of Data Manager</td>
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<td>.6688</td>
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<td>Laboratory Demonstration of Screening Assessment</td>
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<td>4.29</td>
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<td>Presentation 4: Research</td>
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### Table 4:
Session evaluation for winter data manager training sessions (sessions 3 and 4).

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<th>Stand. Deviation</th>
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<td>Progress Monitoring Spreadsheet Participant Performance</td>
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<td>Wireless Demonstration (if applicable)</td>
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<td>DIBELS Data System (if applicable)</td>
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<tr>
<td>Discussion: Data Use at the Building Level</td>
<td>20</td>
<td>2.00</td>
<td>5.00</td>
<td>3.70</td>
<td>1.0311</td>
</tr>
<tr>
<td>Visual Presentation</td>
<td>22</td>
<td>3.00</td>
<td>5.00</td>
<td>3.91</td>
<td>.8112</td>
</tr>
<tr>
<td>Materials (training manual)</td>
<td>21</td>
<td>2.00</td>
<td>5.00</td>
<td>4.62</td>
<td>.5896</td>
</tr>
<tr>
<td>Presentation Skills of Presenters</td>
<td>21</td>
<td>2.00</td>
<td>5.00</td>
<td>4.29</td>
<td>.8598</td>
</tr>
</tbody>
</table>
Stage 4

In Stage 4, the evaluation was to determine which participants learned what material and whether the training program had accomplished its immediate intended learning outcomes. To evaluate training in this stage, a knowledge assessment was developed for each set of training sessions (1, 2 and 3, 4) and a performance assessment was conducted in a laboratory setting for each training. The knowledge assessment consisted of twenty-five multiple choice items which directly related to the topics covered in the training session. Descriptive statistics for the participants’ performance on knowledge assessment 1 are given in Table 5 below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 1</td>
<td>28</td>
<td>9</td>
<td>24</td>
<td>19.5714</td>
<td>3.51</td>
</tr>
</tbody>
</table>

Table 5: Descriptive Statistics for Knowledge Assessment 1.

Since the items in the knowledge assessment were not scored dichotomously, Cronbach’s coefficient alpha was used to establish internal consistency and reliability of the instrument. Overall Alpha was .7153. Information from the Cronbach’s coefficient alpha is detailed in Table 6.
## Reliability Analysis - Scale (Alpha)

### Item-total Statistics

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean</th>
<th>Scale Variance</th>
<th>Corrected Item-Total</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>17.9231</td>
<td>12.3138</td>
<td>.3156</td>
<td>.7016</td>
</tr>
<tr>
<td>Q2</td>
<td>17.6154</td>
<td>12.8062</td>
<td>.2874</td>
<td>.7048</td>
</tr>
<tr>
<td>Q3</td>
<td>17.7692</td>
<td>12.1846</td>
<td>.3933</td>
<td>.6949</td>
</tr>
<tr>
<td>Q4</td>
<td>17.6923</td>
<td>11.6615</td>
<td>.6312</td>
<td>.6759</td>
</tr>
<tr>
<td>Q5</td>
<td>17.5000</td>
<td>13.2200</td>
<td>.3085</td>
<td>.7077</td>
</tr>
<tr>
<td>Q6</td>
<td>17.5000</td>
<td>13.2200</td>
<td>.3085</td>
<td>.7077</td>
</tr>
<tr>
<td>Q7</td>
<td>17.5000</td>
<td>13.2200</td>
<td>.3085</td>
<td>.7077</td>
</tr>
<tr>
<td>Q8</td>
<td>17.8462</td>
<td>12.6154</td>
<td>.2375</td>
<td>.7088</td>
</tr>
<tr>
<td>Q9</td>
<td>17.6538</td>
<td>12.2354</td>
<td>.4629</td>
<td>.6912</td>
</tr>
<tr>
<td>Q10</td>
<td>17.5769</td>
<td>13.3738</td>
<td>.0917</td>
<td>.7169</td>
</tr>
<tr>
<td>Q11</td>
<td>17.5000</td>
<td>13.2200</td>
<td>.3085</td>
<td>.7077</td>
</tr>
<tr>
<td>Q12</td>
<td>17.6154</td>
<td>12.6462</td>
<td>.3504</td>
<td>.7005</td>
</tr>
<tr>
<td>Q13</td>
<td>17.8462</td>
<td>12.8554</td>
<td>.1678</td>
<td>.7150</td>
</tr>
<tr>
<td>Q14</td>
<td>18.1154</td>
<td>12.7462</td>
<td>.2069</td>
<td>.7114</td>
</tr>
<tr>
<td>Q15</td>
<td>18.8846</td>
<td>12.8262</td>
<td>.1714</td>
<td>.7149</td>
</tr>
<tr>
<td>Q16</td>
<td>18.5769</td>
<td>12.9738</td>
<td>.2635</td>
<td>.7068</td>
</tr>
<tr>
<td>Q17</td>
<td>17.6538</td>
<td>13.0354</td>
<td>.1728</td>
<td>.7128</td>
</tr>
<tr>
<td>Q18</td>
<td>17.5769</td>
<td>12.8938</td>
<td>.2985</td>
<td>.7047</td>
</tr>
<tr>
<td>Q19</td>
<td>17.8846</td>
<td>12.6662</td>
<td>.2171</td>
<td>.7108</td>
</tr>
<tr>
<td>Q20</td>
<td>18.0385</td>
<td>12.1985</td>
<td>.3541</td>
<td>.6980</td>
</tr>
<tr>
<td>Q21</td>
<td>17.8846</td>
<td>13.1462</td>
<td>.0817</td>
<td>.7229</td>
</tr>
<tr>
<td>Q22</td>
<td>17.6154</td>
<td>12.9662</td>
<td>.2253</td>
<td>.7089</td>
</tr>
<tr>
<td>Q23</td>
<td>17.7692</td>
<td>13.3846</td>
<td>.0268</td>
<td>.7261</td>
</tr>
<tr>
<td>Q24</td>
<td>17.5385</td>
<td>13.0855</td>
<td>.2883</td>
<td>.7064</td>
</tr>
<tr>
<td>Q25</td>
<td>17.7308</td>
<td>13.0846</td>
<td>.1251</td>
<td>.7175</td>
</tr>
</tbody>
</table>

### Reliability Coefficients

<table>
<thead>
<tr>
<th>N of Cases</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.0</td>
<td>25</td>
</tr>
</tbody>
</table>

Alpha = .7153

**Table 6:** Cronbach’s Coefficient Alpha for Knowledge Assessment 1
The participants were also trained on the use of the spreadsheet established for the collection of student-level data and practiced data entry with the spreadsheet. After participants were trained to enter the data, a performance assessment was conducted. Participants were given ersatz data to enter onto the spreadsheets and after ten students were entered, ten percent of the data was checked for accuracy. Using a point biserial correlation, the relationship between the first knowledge assessment and the first performance assessment was examined. This hypothesis was not significant. The results of the correlation are detailed in Table 7.

Null Hypothesis 1: There is no relationship between participants’ scores on knowledge assessment 1 and performance assessment 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Operation</th>
<th>Knowledge Assessment 1</th>
<th>Performance Assessment 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 1</td>
<td>Point Biserial Correlation</td>
<td>1</td>
<td>-.004</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td></td>
<td>.984</td>
</tr>
<tr>
<td>Performance Assessment 1</td>
<td>Point Biserial Correlation</td>
<td>-.004</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.984</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

**Table 7: Null Hypothesis 1** There is no relationship between participants’ scores on knowledge assessment 1 and performance assessment 1.

The second set of training sessions (sessions 3 and 4) focused heavily on data analysis and application. The knowledge assessment also focused heavily on application and use of the data for decision-making. To evaluate training in this stage, a knowledge assessment was developed for the training sessions (3 and 4) and a performance assessment was conducted in a laboratory setting. The knowledge
assessment consisted of twenty-five multiple choice items which directly relate to the topics covered in the training session. Descriptive statistics for participants’ scores on the second knowledge assessment are given in Table 8 below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 2</td>
<td>29</td>
<td>13</td>
<td>23</td>
<td>19.03</td>
<td>2.47</td>
</tr>
</tbody>
</table>

**Table 8:** Descriptive Statistics for Participants’ Scores on Knowledge Assessment 2.

Since the items were not scored dichotomously, Cronbach’s coefficient alpha was used to establish internal consistency and reliability of the instrument. Overall Alpha was .7031. Information from the Cronbach’s coefficient alpha is detailed in Table 9.
**RELIABILITY ANALYSIS - SCALE (ALPHA)**

**Item-total Statistics**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Variance</th>
<th>Item-Total Correlation</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>16.3182</td>
<td>14.7987</td>
<td>0.0891</td>
<td>0.7082</td>
</tr>
<tr>
<td>Q2</td>
<td>16.3182</td>
<td>14.5130</td>
<td>0.1662</td>
<td>0.7016</td>
</tr>
<tr>
<td>Q3</td>
<td>16.2273</td>
<td>14.9459</td>
<td>0.0639</td>
<td>0.7091</td>
</tr>
<tr>
<td>Q4</td>
<td>16.2727</td>
<td>14.3030</td>
<td>0.2353</td>
<td>0.6954</td>
</tr>
<tr>
<td>Q5</td>
<td>16.5000</td>
<td>13.5952</td>
<td>0.4055</td>
<td>0.6863</td>
</tr>
<tr>
<td>Q6</td>
<td>16.3636</td>
<td>13.8615</td>
<td>0.3373</td>
<td>0.6814</td>
</tr>
<tr>
<td>Q7</td>
<td>16.2273</td>
<td>13.8030</td>
<td>0.4039</td>
<td>0.6814</td>
</tr>
<tr>
<td>Q8</td>
<td>16.1818</td>
<td>14.177</td>
<td>0.0836</td>
<td>0.7068</td>
</tr>
<tr>
<td>Q9</td>
<td>16.1818</td>
<td>14.4416</td>
<td>0.2311</td>
<td>0.6957</td>
</tr>
<tr>
<td>Q10</td>
<td>16.1818</td>
<td>14.3463</td>
<td>0.2611</td>
<td>0.6933</td>
</tr>
<tr>
<td>Q11</td>
<td>16.0909</td>
<td>14.4675</td>
<td>0.2949</td>
<td>0.6919</td>
</tr>
<tr>
<td>Q12</td>
<td>16.0455</td>
<td>14.8074</td>
<td>0.2141</td>
<td>0.6974</td>
</tr>
<tr>
<td>Q13</td>
<td>16.5909</td>
<td>14.4437</td>
<td>0.1851</td>
<td>0.6999</td>
</tr>
<tr>
<td>Q14</td>
<td>16.2727</td>
<td>14.6840</td>
<td>0.1280</td>
<td>0.7045</td>
</tr>
<tr>
<td>Q15</td>
<td>16.2727</td>
<td>14.0173</td>
<td>0.3177</td>
<td>0.6883</td>
</tr>
<tr>
<td>Q16</td>
<td>16.3636</td>
<td>13.6710</td>
<td>0.3909</td>
<td>0.6813</td>
</tr>
<tr>
<td>Q17</td>
<td>16.0909</td>
<td>14.9437</td>
<td>0.1148</td>
<td>0.7031</td>
</tr>
<tr>
<td>Q18</td>
<td>16.3182</td>
<td>14.7035</td>
<td>0.1146</td>
<td>0.7060</td>
</tr>
<tr>
<td>Q19</td>
<td>16.7273</td>
<td>14.7792</td>
<td>0.1260</td>
<td>0.7036</td>
</tr>
<tr>
<td>Q20</td>
<td>16.1364</td>
<td>14.0281</td>
<td>0.4040</td>
<td>0.6833</td>
</tr>
<tr>
<td>Q21</td>
<td>16.2273</td>
<td>13.5173</td>
<td>0.4934</td>
<td>0.6737</td>
</tr>
<tr>
<td>Q22</td>
<td>16.0000</td>
<td>15.0476</td>
<td>0.1727</td>
<td>0.7001</td>
</tr>
<tr>
<td>Q23</td>
<td>16.5000</td>
<td>13.9762</td>
<td>0.2999</td>
<td>0.6897</td>
</tr>
<tr>
<td>Q24</td>
<td>16.1818</td>
<td>13.9654</td>
<td>0.3835</td>
<td>0.6838</td>
</tr>
</tbody>
</table>

**Reliability Coefficients**

N of Cases = 22.0  
N of Items = 25

Alpha = 0.7031

**Table 9: Cronbach’s Coefficient Alpha for Knowledge Assessment 2**
The participants were trained to use the data collection spreadsheets specifically established for entering progress monitoring data. After training, the performance assessment was conducted. Participants entered student data for ten students and ten percent of the data was checked for accuracy for the performance assessment. Using a point biserial correlation, the relationship between the second knowledge assessment and the second performance assessment was examined. This hypothesis was not significant. The results of this correlation are given in Table 10.

**Null Hypothesis 2:** There is no relationship between participants’ scores on knowledge assessment 2 and performance assessment 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Knowledge Assessment 2</th>
<th>Performance Assessment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 2</td>
<td>Point Biserial</td>
<td>1</td>
<td>.228</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.234</td>
</tr>
<tr>
<td>Performance Assessment 2</td>
<td>Point Biserial</td>
<td>.228</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.234</td>
<td>.</td>
</tr>
</tbody>
</table>

**Table 10: Null Hypothesis 2** There is no relationship between participants’ scores on knowledge assessment 2 and performance assessment 2.

Additionally, in Stage 4, it was desirable to explore the relationship between knowledge assessment 1 and knowledge assessment 2. Using Pearson’s $r$ correlation, the relationship between the first knowledge assessment and the second knowledge assessment was examined. This hypothesis was not significant. The results of this correlation are given in Table 11.
Null Hypothesis 3: There is no relationship between participants’ scores on knowledge assessment 1 and knowledge assessment 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Knowledge Assessment 1</th>
<th>Knowledge Assessment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 1</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.204</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.299</td>
</tr>
<tr>
<td>Knowledge Assessment 2</td>
<td>Pearson Correlation</td>
<td>.204</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.299</td>
<td></td>
</tr>
</tbody>
</table>

Table 11: Null Hypothesis 3 There is no relationship between Knowledge Assessment 1 and Knowledge Assessment 2.

And finally, in Stage 4, it was desirable to explore the relationship between performance assessment 1 and performance assessment 2. Using a Phi correlation, the relationship between the first performance assessment and the second performance assessment was examined. This hypothesis was found to be significant at the 0.01 level. The results of this correlation are given in Table 12.

Null Hypothesis 4: There is no relationship between participants’ scores on performance assessment 1 and performance assessment 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Performance Assessment 1</th>
<th>Performance Assessment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Assessment 1</td>
<td>Phi Correlation</td>
<td>1</td>
<td>.596</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.001</td>
</tr>
<tr>
<td>Performance Assessment 2</td>
<td>Phi Correlation</td>
<td>.596</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

Table 12: Null Hypothesis 4 There is no relationship between participants’ scores on performance assessment 1 and performance assessment 2.
Stage 5

In Stage 5, use of the training on the job was examined. Site visits were conducted and data was collected using an observation checklist following the training. In the first field checklist, security of data was assessed (computers are protected by passwords, hard copies of data are secured). The timeliness of data submission was assessed, a method of cross-checking data for accuracy was assessed, as well as the process for sharing data with building staff. Documentation of data entry (logs, field notes was also assessed). After the visit, each area was ranked with a “2” (met expectations), a “1” (partially met expectations) or a “0” (did not meet expectations). Additionally, the accuracy of the data submission was assessed using the same 0-2 scale. Total scores could range from 0-12. Descriptive statistics for field checklist 1 are given in Table 13.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Checklist 1</td>
<td>28</td>
<td>6</td>
<td>12</td>
<td>9.14</td>
<td>1.63</td>
</tr>
</tbody>
</table>

Table 13: Descriptive Statistics for Field Checklist 1.

It was desirable to explore the relationship between knowledge assessment 1 from Stage 4 and the scores from field checklist 1. Using Pearson’s $r$ correlation, the relationship between the first knowledge assessment and the first field checklist was examined. This hypothesis was not found significant. The results of this correlation are given in Table 14.
Null Hypothesis 5: There is no relationship between participants’ scores on knowledge assessment 1 and on field checklist 1.

Additionally, it was desirable to explore the relationship between performance assessment 1 from Stage 4 and the scores from field checklist 1. Using a point biserial correlation, the relationship between the first performance assessment and the first field checklist was examined. This hypothesis was not found significant. The results of this correlation are given in Table 15.

Null Hypothesis 6: There is no relationship between participants’ scores on performance assessment 1 and field checklist 1.

---

Table 14: Null Hypothesis 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Knowledge Assessment 1</th>
<th>Field Checklist 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 1</td>
<td>Pearson</td>
<td></td>
<td>.290</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.142</td>
</tr>
<tr>
<td>Field Checklist 1</td>
<td>Pearson</td>
<td>.290</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.142</td>
<td></td>
</tr>
</tbody>
</table>

Table 15: Null Hypothesis 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Performance Assessment 1</th>
<th>Field Checklist 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Assessment 1</td>
<td>Point Biserial</td>
<td>1</td>
<td>.042</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.833</td>
</tr>
<tr>
<td>Field Checklist 1</td>
<td>Point Biserial</td>
<td>.042</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.833</td>
<td></td>
</tr>
</tbody>
</table>
The second field checklist examined four factors and ranked each factor using a “3” (exceeds expectations), a “2” (met expectations), a “1” (partially met expectations) or a “0” (did not meet expectations). The rationale for including the “3” for this field checklist but not for the first was, because in the areas assessed, data managers could exceed expectations for frequency, quantity or creativity. The areas examined were the frequency of trio meetings (i.e. data sharing sessions), the frequency of communication with the principal regarding data, the visual representation of data through charts, graphs or reports, and the frequency of communication of data with building staff other than the trio. The total score also contained one item (0-2) which reflected the accuracy of the data submitted. Total scores could range from 0-14 including the assessment of the accuracy of the data which was submitted to the Ohio Department of Education. Descriptive statistics for the field checklist 2 are given in Table 15.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Checklist 2</td>
<td>28</td>
<td>6</td>
<td>13</td>
<td>9.82</td>
<td>1.83</td>
</tr>
</tbody>
</table>

**Table 16: Descriptive Statistics for Field Checklist 2**

It was desirable to explore the relationship between knowledge assessment 2 from Stage 4 and the scores from field checklist 2. Using Pearson’s \( r \) correlation, the relationship between the second knowledge assessment and the second field checklist was examined. This hypothesis was not found significant. The results of this correlation are given in Table 17.
Null Hypothesis 7: There is no relationship between participants’ scores on knowledge assessment 2 and field checklist 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Knowledge Assessment 2</th>
<th>Field Checklist 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 2</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.859</td>
</tr>
<tr>
<td>Field Checklist 2</td>
<td>Pearson Correlation</td>
<td>.035</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.859</td>
<td>.</td>
</tr>
</tbody>
</table>

**Table 17: Null Hypothesis 7** There is no relationship between participants’ scores on knowledge assessment 2 and field checklist 2.

It was also desirable to explore the relationship between performance assessment 2 from Stage 4 and the scores from field checklist 2. Using a point biserial correlation, the relationship between the second performance assessment and the second field checklist was examined. This hypothesis was not found significant.

The results of this correlation are given in Table 18.

Null Hypothesis 8: There is no relationship between participants’ scores on performance assessment 2 and field checklist 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Performance Assessment 2</th>
<th>Field Checklist 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Assessment 2</td>
<td>Point Biserial</td>
<td>1</td>
<td>.204</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.297</td>
</tr>
<tr>
<td>Field Checklist 2</td>
<td>Point Biserial</td>
<td>.204</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.297</td>
<td>.</td>
</tr>
</tbody>
</table>

**Table 18: Null Hypothesis 8** There is no relationship between participants’ scores on performance assessment 2 and field checklist 2.
And finally, it was desirable to explore the relationship between scores from field checklist 1 and field checklist 2. Using Pearson’s $r$ correlation, the relationship between the first and the second field checklist was examined. This hypothesis was found to be significant at the 0.01 level. The results of this correlation are given in Table 19.

Null Hypothesis 9: There is no relationship between participants’ scores on field checklist 1 and field checklist 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Field Checklist 1</th>
<th>Field Checklist 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Checklist 1</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.520</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.005</td>
</tr>
<tr>
<td>Field Checklist 2</td>
<td>Pearson Correlation</td>
<td>.520</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.005</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level.

Table 19: Null Hypothesis 9 There is no relationship between participants’ scores on field checklist 1 and field checklist 2.

After the correlations were completed, it was necessary to explore the knowledge assessments further, since they did not correlate with the other assessments as anticipated. The first knowledge assessment was constructed using the first three levels of Bloom’s taxonomy: knowledge, comprehension and application. The knowledge subscale consisted of items 1, 2, 3, 4, 9, 12, 14, 18 and 25. The comprehension subscale consisted of items 5, 8, 10, 13, 15, 19, 20 and 21. The application subscale consisted of items 6, 7, 11, 16, 17, 22, 23 and 24. First, since the application subscale was more performance based, it was correlated with the performance assessment and the field checklist. Neither correlation was found to be significant. To further explore the strengths and limitations of this instrument, a
confirmatory factor analysis was conducted, using a forced three factor solution. The factor analysis is shown in Table 20 and a rotated component matrix is shown in Table 21.
### Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>4.055</td>
<td>16.219</td>
<td>4.055</td>
</tr>
<tr>
<td>2</td>
<td>3.452</td>
<td>13.807</td>
<td>3.452</td>
</tr>
<tr>
<td>3</td>
<td>2.708</td>
<td>10.833</td>
<td>2.708</td>
</tr>
<tr>
<td>4</td>
<td>2.271</td>
<td>9.084</td>
<td>4.943</td>
</tr>
<tr>
<td>5</td>
<td>2.075</td>
<td>8.300</td>
<td>58.243</td>
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<tr>
<td>6</td>
<td>1.854</td>
<td>7.416</td>
<td>65.659</td>
</tr>
<tr>
<td>7</td>
<td>1.588</td>
<td>6.350</td>
<td>72.009</td>
</tr>
<tr>
<td>8</td>
<td>1.231</td>
<td>4.924</td>
<td>76.934</td>
</tr>
<tr>
<td>9</td>
<td>1.106</td>
<td>4.425</td>
<td>81.359</td>
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<td>10</td>
<td>0.907</td>
<td>3.626</td>
<td>84.985</td>
</tr>
<tr>
<td>11</td>
<td>0.804</td>
<td>3.217</td>
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<td>12</td>
<td>0.733</td>
<td>2.930</td>
<td>91.132</td>
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<tr>
<td>13</td>
<td>0.509</td>
<td>2.037</td>
<td>93.169</td>
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<tr>
<td>14</td>
<td>0.374</td>
<td>1.497</td>
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<tr>
<td>15</td>
<td>0.327</td>
<td>1.306</td>
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<td>16</td>
<td>0.284</td>
<td>1.135</td>
<td>97.107</td>
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<tr>
<td>17</td>
<td>0.200</td>
<td>0.800</td>
<td>97.906</td>
</tr>
<tr>
<td>18</td>
<td>0.161</td>
<td>0.644</td>
<td>98.550</td>
</tr>
<tr>
<td>19</td>
<td>0.138</td>
<td>0.550</td>
<td>99.100</td>
</tr>
<tr>
<td>20</td>
<td>0.08803</td>
<td>0.352</td>
<td>99.452</td>
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<tr>
<td>21</td>
<td>0.06106</td>
<td>0.244</td>
<td>99.696</td>
</tr>
<tr>
<td>22</td>
<td>0.05777</td>
<td>0.231</td>
<td>99.927</td>
</tr>
<tr>
<td>23</td>
<td>0.01071</td>
<td>0.04285</td>
<td>99.970</td>
</tr>
<tr>
<td>24</td>
<td>0.07442</td>
<td>0.02977</td>
<td>100.000</td>
</tr>
<tr>
<td>25</td>
<td>-0.09731</td>
<td>-0.03892</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

**Table 20: Three Factor Analysis for Knowledge Assessment 1**
Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>.435</td>
<td>-.08967</td>
<td>.145</td>
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<tr>
<td>Q2</td>
<td>.244</td>
<td>.01388</td>
<td>.05350</td>
</tr>
<tr>
<td>Q3</td>
<td>.250</td>
<td>.509</td>
<td>.137</td>
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<td>Q4</td>
<td>.553</td>
<td>.430</td>
<td>.386</td>
</tr>
<tr>
<td>Q5</td>
<td>.302</td>
<td>.672</td>
<td>-.06464</td>
</tr>
<tr>
<td>Q6</td>
<td>-.08130</td>
<td>.557</td>
<td>.502</td>
</tr>
<tr>
<td>Q7</td>
<td>.846</td>
<td>.03139</td>
<td>-.123</td>
</tr>
<tr>
<td>Q8</td>
<td>-.107</td>
<td>-.01018</td>
<td>.678</td>
</tr>
<tr>
<td>Q9</td>
<td>.200</td>
<td>.06497</td>
<td>.753</td>
</tr>
<tr>
<td>Q10</td>
<td>-.03521</td>
<td>.445</td>
<td>-.318</td>
</tr>
<tr>
<td>Q11</td>
<td>.846</td>
<td>.03139</td>
<td>-.123</td>
</tr>
<tr>
<td>Q12</td>
<td>.724</td>
<td>-.129</td>
<td>.05100</td>
</tr>
<tr>
<td>Q13</td>
<td>-.111</td>
<td>.401</td>
<td>-.06010</td>
</tr>
<tr>
<td>Q14</td>
<td>.138</td>
<td>.08064</td>
<td>.455</td>
</tr>
<tr>
<td>Q15</td>
<td>.472</td>
<td>.188</td>
<td>-.387</td>
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<tr>
<td>Q16</td>
<td>.762</td>
<td>-.09305</td>
<td>-.06623</td>
</tr>
<tr>
<td>Q17</td>
<td>.03035</td>
<td>.478</td>
<td>.04298</td>
</tr>
<tr>
<td>Q18</td>
<td>-.110</td>
<td>.683</td>
<td>.232</td>
</tr>
<tr>
<td>Q19</td>
<td>.326</td>
<td>.239</td>
<td>.227</td>
</tr>
<tr>
<td>Q20</td>
<td>.143</td>
<td>.520</td>
<td>.140</td>
</tr>
<tr>
<td>Q21</td>
<td>.308</td>
<td>-.506</td>
<td>.371</td>
</tr>
<tr>
<td>Q22</td>
<td>-.161</td>
<td>.222</td>
<td>.706</td>
</tr>
<tr>
<td>Q23</td>
<td>.06547</td>
<td>-.448</td>
<td>.439</td>
</tr>
<tr>
<td>Q24</td>
<td>.01844</td>
<td>.275</td>
<td>.177</td>
</tr>
<tr>
<td>Q25</td>
<td>-.09711</td>
<td>.408</td>
<td>.05580</td>
</tr>
</tbody>
</table>


a Rotation converged in 4 iterations.

Table 21: Orthogonal rotation for Knowledge Assessment 1

To further explore the three subscales of the first knowledge assessment, Cronbach’s coefficient alpha was used to establish internal consistency of each subscale (knowledge, comprehension and application). The alpha for the knowledge subscale was .6026. The alpha for the comprehension subscale was .3824 and if item 21 was eliminated the alpha increased to .4694. The alpha for the application subscale was .3918 and if item 23 was eliminated the alpha increased to .4434.
In the construction of the second knowledge assessment, items 12-24 were performance oriented (application subscale). This subscale had a Cronbach’s coefficient alpha of .6839. If item 14 was eliminated, the alpha increased to .7344.

It was also necessary to explore the performance assessments further since no correlations were found between it and the other measures. The performance assessment was conducted in a laboratory setting. Data managers entered data sets and their entries were checked for accuracy. The scores on this assessment were dichotomous. If the data entry was correct, the data manager scored a “1” and if the data entry was not correct, the data manager scored a “0.” For the first performance assessment, 84% of the data managers entered data correctly and scored a “1.” For the second performance assessment, 94% of the data managers entered data correctly and scored a “1.” Because it appeared that the performance assessment was insufficiently challenging (i.e. ceiling effect), the comparable measure from the field checklists was extracted in order to assess the transfer of knowledge and correlated with the knowledge assessments and the field checklists, including the application subscales of the knowledge assessments. The application subscale of the second knowledge assessment and the second data submission was found to be correlated (Table 22).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Operation</th>
<th>Knowledge Assessment 2 (Application Subscale)</th>
<th>Data Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment 2 (App. Subscale)</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.568</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.003</td>
</tr>
<tr>
<td>Data Submission</td>
<td>Pearson Correlation</td>
<td>.568</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

**Table 22: Correlation of Application Subscale of Knowledge Assessment 2 and the Second Data Submission.**

It is also worth noting that for the first data submission, 14.2% of data submitted was error free. For the second data submission, 71.5% of the data was error free. The increase in the percentage of error free data submission between the first submission and the second was 57.3%.

Additionally at Stage 5, structured, open-ended interviews were conducted with data managers. Twenty five interviews were conducted (two data managers chose not to be interviewed and one data manager could not be interviewed due to repeated scheduling conflicts). The interviews were tape recorded, transcribed into Microsoft Word, coded and analyzed for themes using N6, the most recent version of NUD*IST.

The first question asked data managers to describe their experience this year with building trio meetings. There were two equally prevalent themes for this question. The first was that data managers described meeting regularly with their trio. Some described “regularly” as once per month, some described it as twice per month and a few described meetings as occurring daily. The other theme that
emerged in this question was that trios had not really met regularly and although intentions to meet were good, the meetings did not occur on a regular basis. This indicated that trio meetings were occurring and in some places were regular occurrences, but in others, they were not regularly occurring.

The second question asked data managers to describe what was discussed at the trio meetings. Again, two major themes emerged. The first was that data was discussed at the meetings. The second theme was that the trio members used the meeting time as an opportunity to inform other members of their activities since the last meeting. A third theme, although not as prevalent, was that intervention for students was regularly discussed as part of the trio meetings. The fact that data emerged as the dominate theme indicates that discussions about data are occurring as desired in many situations.

The third question asked data managers to describe how they typically supplied information on individual student progress. Four themes emerged. The first was that they used the reports from the DIBELS data system. The second was that they used the charts available from the Wireless Generation website (a vendor with whom we are piloting a hand-held (i.e. Palm Pilot) application for our reading assessments, the TPRI and the DIBELS). The third theme was that they used graphs available from the Wireless Generation website, and the fourth theme was that they created graphs from spreadsheets that they (the data managers) had created themselves. This indicated that data managers were using a variety of methods to display data in useable formats for building staff.
The fourth question asked data managers to describe how they typically supplied information on group progress. The most prevalent theme was that they used graphs from spreadsheets they had created themselves. A second theme was that they depended on graphs from Wireless Generation. Again, this indicated that data managers rely on multiple methods to communicate data to building staff.

The fifth question asked data managers to describe how they typically supplied information on the effectiveness of intervention. Two themes emerged. The most prevalent was that they did not feel they were supplying information about the effectiveness of intervention. A second theme that was evident from the data was that building data managers supplied this information through graphs. One went on to describe a very elaborate process created which looked at the group of students who qualified for after school intervention. This data manager organized data to provide information about the progress of the group of student who qualified and were participating in after school intervention opportunities and those that were qualified but were not participating. This data was presented at a parent meeting and it was so compelling that five parents instantly signed their child up for the after school intervention program.

The sixth question asked data managers to describe how they supplied information on the effectiveness of materials. The overwhelming theme apparent in answers to this question was that data managers did not feel they do so at this time.

Question seven asked data managers whether they felt they had acquired the knowledge and skills to provide data in a useful format to building level staff. The overwhelming response was that data managers felt they had acquired the necessary
knowledge and skills. Some went on and referenced being able to do so through the use of the DIBELS website. This seemed to indicate that data managers felt that through their experience this year on the job and through their training that they were able to provide useful data for building staff.

When asked, in the eighth question, whether data managers felt they had the tools necessary to provide data in a useful format to building level staff, the resounding theme was that they did feel they had the necessary tools. Several mentioned the DIBELS website again, several mentioned specific technology and/or software, and others mentioned the use of the Palm Pilots.

Question nine asked data managers what evidence they had seen that data was being used to inform classroom instruction. Overwhelmingly, data managers mentioned that teachers were using the data to group students for instruction or for intervention. A second theme which emerged was that teachers grouped students to work on specific skills using the data. These themes indicated that data is being used in to inform classroom instruction.

When asked what has been most challenging in their role as data manager in question ten, two prevalent themes emerged. One was that they had difficulty finding enough time to perform their job to the level they would like. The other was that working with either their EMIS coordinator or their data acquisition site personnel had been frustrating due to a lack of understanding on the part of EMIS/DA site personnel. This indicates that there is a need for training of personnel who serve in these roles. Four other less prevalent themes which were evident was that data managers were concerned about the lack of involvement of their principals, that they
had a hard time figuring out days of instruction for each assessment period with their present student information system, that mobility in their student population was frustrating to deal with in handling the data and that they desired to be more helpful to their teachers with whom they work.

When asked what had been the most rewarding to them this year in their role as building data manager, the most prevalent theme was seeing the growth of students and/or providing students with opportunities by learning to read were dominant. Another theme evident in the answers to this question was that data managers found it rewarding to see changes in teacher attitude.

The twelfth question asked data managers where they felt they needed more training. The most pervasive theme was that they wanted to learn more about displaying data in graphical formats that would be most useful to building staff. Two other themes which emerged were that data managers wanted to better understand the assessments used in the project and to learn how to more accurately interpret assessment data. The answers to this question will inform training opportunities for data managers for next year and indicated that. It was evident that while the data managers feel they have acquired knowledge and skills to provide data to staff (question number seven) they realize that they still have the need and desire to learn more in this area.

The last question asked data managers if they had anything else to share regarding their experience this year or their needs for next year. A number of data
managers indicated that they would like clearer expectations from their districts about their role. Several commented that they had very positive experiences this year, one who described it as the best experience of her career.

The information from the interviews, in many ways, corroborated data found elsewhere in this study, but provided more depth in many of the same areas that had been explored.

Stage 6

The organizational benefits of the training were assessed through the use of questionnaires which were developed for the data managers and for the literacy specialists, the resource coordinators and the building principals (i.e. data consumers). The questionnaires are a combination of items scored with a dichotomous scale and those that are not. With a multiple item, mixed rating scale instrument such as this, the Cronbach’s coefficient alpha is the appropriate measure of internal consistency. Overall Alpha was .7133. Results for the Cronbach’s coefficient alpha for the questionnaire for the data managers is given on Table 23.
### Item-total Statistics

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Variance</th>
<th>Corrected Item-Total Correlation</th>
<th>Deleted Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>14.6897</td>
<td>16.0074</td>
<td>.4860</td>
<td>.6796</td>
</tr>
<tr>
<td>Q2</td>
<td>14.8966</td>
<td>18.2389</td>
<td>.3824</td>
<td>.6949</td>
</tr>
<tr>
<td>Q3</td>
<td>14.6897</td>
<td>18.5074</td>
<td>.3340</td>
<td>.7066</td>
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<tr>
<td>Q4</td>
<td>14.8276</td>
<td>19.3631</td>
<td>.2551</td>
<td>.7222</td>
</tr>
<tr>
<td>Q5</td>
<td>17.2069</td>
<td>21.5271</td>
<td>.4555</td>
<td>.6915</td>
</tr>
<tr>
<td>Q6</td>
<td>17.4138</td>
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<td>Q7</td>
<td>17.5517</td>
<td>21.2562</td>
<td>.5042</td>
<td>.6869</td>
</tr>
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<td>Q8</td>
<td>17.3103</td>
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<td>.7245</td>
<td>.6667</td>
</tr>
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<td>16.9655</td>
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<td>.1704</td>
<td>.7144</td>
</tr>
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</table>

### Reliability Coefficients

N of Cases = 29.0

N of Items = 12

Alpha = .7133

**Table 23:** Cronbach’s Coefficient Alpha for Data Use Questionnaire (Data Managers)

A parallel questionnaire was created for data consumers (literacy specialists, resource coordinators and principals). Results from the Cronbach’s Coefficient Alpha for the questionnaire created for data consumers are given in Table 24.
### Table 24: Cronbach’s Coefficient Alpha for Data Use Questionnaire for Data Consumers

Descriptive statistics for the questionnaires are given on the table below. Twenty eight points were possible on each questionnaire. Mean scores for literacy specialists were lower than the other roles. Descriptive statistics are presented with literacy specialists included and excluded.
### Descriptive Statistics Total Score

<table>
<thead>
<tr>
<th>Roles</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Roles</td>
<td>152</td>
<td>6</td>
<td>28</td>
<td>17.73</td>
<td>4.61</td>
</tr>
<tr>
<td>All Except Literacy Specialist</td>
<td>91</td>
<td>7</td>
<td>28</td>
<td>18.84</td>
<td>4.24</td>
</tr>
</tbody>
</table>

**Table 25: Descriptive Statistics by Role (all).**

Response rates for each role (data managers, literacy specialists, resource coordinators and principals) are given on Table 24.

<table>
<thead>
<tr>
<th>Role</th>
<th>N</th>
<th>Number of completed surveys</th>
<th>Percentage of completed surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Managers</td>
<td>29</td>
<td>29</td>
<td>100%</td>
</tr>
<tr>
<td>Literacy Specialists</td>
<td>65</td>
<td>60</td>
<td>92.31%</td>
</tr>
<tr>
<td>Resource Coordinators</td>
<td>28</td>
<td>27</td>
<td>96.43%</td>
</tr>
<tr>
<td>Principals</td>
<td>65</td>
<td>35</td>
<td>53.85%</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
<td>152</td>
<td>81.28%</td>
</tr>
</tbody>
</table>

**Table 26: Response Rates for Data Use Surveys by Role**

Assuming a normal distribution, homogeneity of variance and independence of scores, an analysis of variance was performed (Bluman, p. 545). An analysis of variance was an appropriate statistical technique used to compare variance between group means. Normality was tested using the Shapiro-Wilk test of normality. The Shapiro-Wilk resulted in no abnormal distributions with regard to roles. The results for the roles are; Data Managers p=.673, Resource Coordinators p=.145, Literacy Specialist p=.425 and Principals p=.347. Homogeneity of variance was tested using
Levene’s test of homogeneity of variance. Levene’s test was not significant resulting in a p equal to .510. The breakdown for role with two or less schools and p equal to .199 for role with three or more schools. This hypothesis was not significant. The calculated F score equaled .233 with df₁ equal to 1 with df₂ equal to 27. This produced a p equal to 0.633. Results of this Analysis of Variance are given in Table 25. The collected data was used to test the following null hypothesis:

Null Hypothesis 10: There is no difference in the population of scores between the data managers who serve three or more buildings and those who serve two or less buildings.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4.822</td>
<td>1</td>
<td>4.822</td>
<td>0.233</td>
<td>0.633</td>
</tr>
<tr>
<td>Within Groups</td>
<td>558.626</td>
<td>27</td>
<td>20.690</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>563.448</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 27: Null Hypothesis 10** There is no difference in the population of scores between the data managers who serve three or more buildings and those who serve two or less buildings.

Additionally, it was desirable to explore the variance between groups (groups are determined by whether the data manager serves two or less or three or more buildings) by role (data managers, literacy specialists, resource coordinators, principals). The calculated F score equaled 2.90 with df₁ equal to 7 with df₂ equal to 144. This produced a p equal to 0.01. Role was the only main effect that was found
to be significant. The calculated $F$ score for role equaled 5.29 with $df_1$ equal to 3 with $df_2$ equal to 149. This produced a $p$ less than or equal to 0.0009. Results of this Analysis of Variance are given in Table 26.

**Null Hypothesis 11:** There is no difference in the population of scores between roles of data consumers served by data managers who serve three or more buildings and those who serve two or less buildings.

<table>
<thead>
<tr>
<th>Tests of Between-Subjects Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: Total Score</td>
</tr>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Corrected Model</td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>role</td>
</tr>
<tr>
<td>group</td>
</tr>
<tr>
<td>role * group</td>
</tr>
<tr>
<td>Error</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Corrected Total</td>
</tr>
</tbody>
</table>

R Squared = .124 (Adjusted R Squared = .081)

**Table 28: Null Hypothesis 11** There is no difference in the population of scores between roles of data consumers served by data managers who serve three of more buildings and those who serve two or less buildings.

Due to the significant differences in Total Score between roles a post hoc Bonferroni was calculated. This test compares all possible pairs. The only two roles that were significantly different were Principals and Literacy Specialists, such that Principals scored significantly higher than Literacy Specialists. This resulted in a $p$ equal to or less than .0009. Results of the Bonferroni are given in Table 27.
## Multiple Comparisons

**Dependent Variable: Total Score**

**Bonferroni**

<table>
<thead>
<tr>
<th>(I) role</th>
<th>(J) role</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Manager</td>
<td>Literacy Specialist</td>
<td>2.056</td>
<td>0.998</td>
<td>0.247</td>
</tr>
<tr>
<td></td>
<td>Resource Coordinator</td>
<td>0.101</td>
<td>1.183</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Principal</td>
<td>-1.891</td>
<td>1.111</td>
<td>0.545</td>
</tr>
<tr>
<td>Literacy Specialist</td>
<td>Data Manager</td>
<td>-2.056</td>
<td>0.998</td>
<td>0.247</td>
</tr>
<tr>
<td></td>
<td>Resource Coordinator</td>
<td>-1.955</td>
<td>1.022</td>
<td>0.347</td>
</tr>
<tr>
<td></td>
<td>Principal</td>
<td>-3.947</td>
<td>0.938</td>
<td>0.000</td>
</tr>
<tr>
<td>Resource Coordinator</td>
<td>Data Manager</td>
<td>-0.101</td>
<td>1.183</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Literacy Specialist</td>
<td>1.955</td>
<td>1.022</td>
<td>0.347</td>
</tr>
<tr>
<td></td>
<td>Principal</td>
<td>-1.992</td>
<td>1.133</td>
<td>0.485</td>
</tr>
<tr>
<td>Principal</td>
<td>Data Manager</td>
<td>1.891</td>
<td>1.111</td>
<td>0.545</td>
</tr>
<tr>
<td></td>
<td>Literacy Specialist</td>
<td>3.947</td>
<td>0.938</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Resource Coordinator</td>
<td>1.992</td>
<td>1.133</td>
<td>0.485</td>
</tr>
</tbody>
</table>

The mean difference is significant at the .05 level.

### Table 29: Bonferroni post hoc test

## SUMMARY

This chapter presented the findings of the study. Chapter five will present a summary of the study, the conclusions of the study, limitations of the study and suggestions for further research and implications.
CHAPTER 5

SUMMARY AND IMPLICATIONS

In this Chapter, a summary of the study is provided as well as a discussion of the findings of the study. Additionally, implications for policy, further research and practice are discussed.

SUMMARY OF THE STUDY

This study was an investigation into the efficacy of training provided to building data managers in Year 1, Cohort 1 of Reading First-Ohio. The study was organized by using an evaluation model that was developed specifically to evaluate human resource development. To serve the overarching purpose of evaluating the training, the answers to twelve research questions, organized by the six stages of the evaluation model, were sought. These questions were posed in Chapter 1. Five types of assessments were developed for the purpose of this evaluation—session evaluations (2) administered as part of the evaluation in Stage 3, knowledge assessments (2) administered to data managers as part of the evaluation in Stage 4, performance assessments (2), also administered to data managers in Stage 4, field checklist (2), used during site visits in Stage 5, and a data use questionnaire (2),
administered to data managers and a parallel questionnaire administered to literacy specialists, resource coordinators and principals (i.e. data consumers) in Stage 6. The questionnaires were administered to a total of 152 respondents. Additionally, an interview protocol was established for use with data managers at Stage 5 in order to gain more information and insight. Findings of the study will be organized by stage of the evaluation model.

FINDINGS OF THE STUDY

Limitations of the study

This study was limited by the involvement of the researcher in the development and training of the building data managers. This study was limited by the small number of data managers who were subjects in the research (29). Especially when looked at as two groups, separated by the number of buildings served, this small number became a serious limitation. Of the twenty-nine data managers, only three were male. Because of these factors, it is impossible to generalize the results beyond the population studied. And finally, this study did not utilize an experimental design nor a quasi-experimental design. No control group was used.

Stage 1 (need)

In stage 1 of the evaluation model, the need for human resource development is established. Due to the size and scope of this project ($176 million over a six year period), the existence of the position of data manager in each funded building (65
total) and the need to train data managers to accurately report data in order to continue funding to the building and/or district, it was determined that training needed to be devised to impart knowledge and skills to the data managers so that they can ensure the accuracy of the collected data and meet the specific duties which are described within the Reading First-Ohio approved grant. Data managers are responsible to enter data accurately into the data collection system, maintain the data collection system at their building, and represent and analyze data for use by building staff to make decisions at the student, classroom, building, district and program levels.

**Stage 2 (planning for training) and Stage 3 (conducting training)**

In Stage 2, how to produce the needed skills and knowledge among the building data managers was determined. Literature which could inform this process was reviewed. Characteristics of adult learners were carefully studied and incorporated. Adults are motivated to learn when they have input into what, why and how they will learn (Smith, 1982). In the development of training, data managers had input before the first training that they wanted to understand the specifics of their role and wanted to have the knowledge and skills to serve well in their new role. This was considered in the development of the training. Adult learners want to be able to relate their newly acquired knowledge and skills to their personal interests, work or career goals (characteristics of adult learners and Knowles’ theory of andragogy). In the planning of the training, knowledge and skills which would be necessary to serve as a data manager were outlined with feedback from personnel at the Ohio Department of
Education as well as personnel from the Reading First-Ohio Center for Professional Development and Technical Assistance. This knowledge included job and role descriptions from both the approved Ohio application to the U.S. Department of Education as well as the position descriptions that districts wrote as part of the subgrant application process. Another characteristic of adult learners, as well as an assumption in the theory of andragogy, is that adults need to understand how what they are learning directly relates to their life (Zemke & Zemke, 1984; Knowles, 1980) or in other words, why are they learning? To illustrate this point, spreadsheets which would be used for data collection in the field were also used in the training. The participants entered and checked data just as they would back at their work site when they were actually entering student data into the system.

Adults bring a wide range of experiences with them to new learning opportunities (Lieb, 2002). This is evident by the number of years of experience that data managers had coming into this role (Table 2). Data managers overall came into the role with 17 years of experience in education. They came with classroom experience, experience outside of education, experience in support positions, experience at various levels of the education system, etc. To capitalize on this wide range of experience, discussions and opportunities to share were purposely built into the training, especially in training sessions 3 and 4. Also during Year 1, the construction of an electronic bulletin board where data managers can post questions and answers to each other has been underway for approximately six months. It was hoped it would be available this year, but will be operational for next school year. It is also known that in order for adults to learn well, anxiety must be minimized.
Because this position was new, there was a fair amount of anxiety surrounding the responsibilities and expectations. In order to deal with this, special planning to establish an open, collegial atmosphere was undertaken. Participants were encouraged to ask questions throughout the sessions, the agenda for the meeting was posted as participants entered training sessions, participants were greeted at the door as they entered, materials were arranged at each seat, refreshments/lunch were provided, etc.

It is also known that adults are motivated to learn differently. Some are motivated by social interactions. This was reflected in training through opportunities to share and brainstorm during training sessions. Other learners are motivated by the desire to do good for others. Being that most data managers were educators, it was thought that by stressing that the training they received and how their work would directly impact the opportunity for children to learn to read well, it was anticipated this emphasis would meet the needs of learners who desire to make a difference in the lives and education of children (this sentiment was also confirmed by interviews in Stage 5 of the evaluation model). Additionally, adults are motivated by their attitudes toward the instructor and their own affect. During training sessions, instructors carefully monitored these factors. In all but one training, multiple trainers were available to assist. This allowed one person to conduct the training and the other(s) to observe participants’ reactions and offer feedback to the instructor. Adults also need to feel a sense of competence as a result of their training. Especially during the hands-on portions of the training, multiple trainers were available to support participants as they entered and checked data. It was desirable for all participants to
feel a sense of competence and accomplishment at the end of the sessions. In most sessions, at least three trainers were available to support participants and offer feedback and assistance to participants as they tried new skills.

In Knowles’ theory of andragogy, one assumption is that learning is problem centered. This is also evident in the characteristic of adult learning that learning opportunities are related explicitly to how they will be used on the job. In training, this factor was reflected in all training sessions by discussing “real world examples” of issues and problems the data managers may encounter in their role. Especially in training sessions 3 and 4 where data analysis and use of data were emphasized, examples were always planned, executed and discussed that were likely to be encountered by the data managers. These student-centered examples were also reflective of how data could be used to impact student learning, which is a guiding principle in the development of professional development opportunities (Guskey, 1997).

Also in planning training, the format for the training sessions was carefully considered. Literature in professional development in education was consulted. A workshop approach with observation/feedback opportunities was chosen for the major training sessions with individualized follow-up sessions planned as part of the site visits and the technical assistance opportunities extended to data managers. This format was desirable because the use of a computer lab was necessary in order to illustrate and practice the technical skills needed by data managers. A workshop approach seemed to be the most effective way to impart the knowledge and skills
necessary for data managers to learn to do their work. Additionally, training needed to be accomplished efficiently, as the first data collection period was quickly approaching.

The content of the training sessions was determined by working backwards and determining what skills and knowledge (content characteristics) were needed and then planning how these skills could be accomplished most effectively. Additionally, it was necessary to determine what skills would most likely impact the organization positively and how learning opportunities could be structured to accomplish these goals. This backwards planning is reflective of professional development planning, especially in the age of accountability (Guskey, 1999).

**Stage 3 (installation of program design)**

Training sessions were evaluated in this stage through attendance and session evaluations. Attendance at training sessions was 100% throughout the year, most likely indicating that participants saw purpose in attending training sessions. Components of the sessions were rated using a 5 point semantic differential scale with 5 being the highest rating. The session evaluations were overwhelmingly positive (sessions 1 and 2 overall mean = 4.3547; sessions 3 and 4 overall mean = 3.945). In both cases, the overall mean score for the sessions exceeds the median of the scale, which is a 3. Suggestions by participants were incorporated into future training sessions. This stage is the equivalent of Kirkpatrick’s “Did they like it?” stage and stage one of Guskey’s evaluation model (i.e. “happiness indicators.”)
Stage 4 (who is learning, are intended learning outcomes being accomplished)

Stage 4 sought to examine who was learning, what they were learning and if the intended learning outcomes were being accomplished. Instruments in this stage were knowledge assessments 1 and 2 (Appendix C and D), and performance assessments 1 and 2. A test of correlation was conducted for knowledge assessment 1 with performance assessment 1; knowledge assessment 2 with performance assessment 2; the two knowledge assessments with each other and the two performance assessments with each other. Only one of these four correlations was found to be significant and that was the correlation between the two performance assessments. There are several possible reasons for this lack of significance in the correlations. The first is that although both knowledge assessments were found to be internally consistent using the Cronbach’s Coefficient Alpha as a measure, they were both in the low range of acceptable, especially the second knowledge assessment, which measured .7031 which is just barely over the acceptable standard of .70. The second reason why a greater number of significant correlations were not present at this stage is perhaps because the knowledge assessments measured knowledge through a traditional construct (a written evaluation) whereas the performance assessments measure knowledge through an applied construct. The literature on the characteristics of adult learning and the theory of andragogy (Knowles) both assert that adult learning tends to be contextual and problem-based. A hands-on assessment of knowledge may be a more appropriate way of assessing knowledge in adult learners than the knowledge assessment, which may have contributed to none of the correlations involving the knowledge assessment being significant. A performance
assessment might be more compatible with the way that adults learn. This conclusion would also be consistent with the practice of criterion referenced instruction where participants practice skills related to the job in a low-risk situation with feedback and a performance assessment is then utilized to assess the use of knowledge. This is an accepted practice in many types of training for adults and would be the equivalent of Kirkpatrick’s “Did they learn it?” stage or stage 2 of Guskey’s model of evaluation of professional development.

Additionally, several issues were discovered when the first knowledge assessment was examined in further detail. The forced three factor analysis indicated that less than half of the items on this assessment loaded in the construct for which they were intended. This may have contributed to the lack of correlation with other items. Additionally, the subscales were not found to be internally consistent, although the Cronbach’s coefficient alpha for the overall assessment was acceptable. Nunnally (1967) suggested that in exploratory research, a coefficient alpha between .50 and .60 is acceptable. Using this as a standard, the knowledge subscale on the first knowledge assessment and the performance subscale on the second knowledge assessment would fall into the range of “acceptable.” Piloting of the knowledge assessments was not possible this year since they were so closely aligned with the content of the training and no one had participated in the training at the time the assessments were first used. For Cohort 2, piloting and refinement of the instruments would be a necessary step. The application subscale of the second knowledge assessment has a higher degree of internal consistency and could be easily modified for further use.
Stage 5 (use of training on the job)

Stage 5 evaluates whether adults transfer their newly acquired knowledge and skills to their workplace and use them. This transfer of knowledge is reflective of cognitive flexibility theory, which was discussed in Chapter 2. Learners restructure their knowledge when knowledge and skills are transferred beyond their initial learning experience. Whether knowledge and skills were used on the job was measured through the field checklists 1 and 2 (Appendix E and F). The mean scores on the two field checklists are 9.14 out of 12 possible points and 9.82 out of 14 points respectively. Considering that on the second field checklist (which included “3” = “exceeds expectations”), a score of 10 would have been gained if data managers were meeting all expectations, but not exceeding any. The mean score for the second field checklist was 9.82 (approximately 10) and so it would appear that data managers are meeting expectations at this time with opportunity to grow. Meeting expectations is a realistic expectation for Year 1 of implementation.

Additionally, the second field checklist begins to assess whether data managers can display information in a useable format for building level staff so that staff are able to use this information to inform their instruction. This is one of the most commonly cited barriers to using data in decision-making processes in schools (Cromey, 2000; Mason, 2002). The field checklist scores and the information gained in the interviews indicate that data managers perceive this as a need which exists for future training sessions.

In terms of evaluating Stage 5, a series of tests of correlation were conducted between the knowledge assessments, the performance assessments and the field
checklists. The only correlation which was significant was the correlation between the two field checklists, which indicates they are measuring the use of knowledge and skills through similar constructs. This stage is the equivalent of Kirkpatrick’s “Did they use it?” and stage 4 of Guskey’s model of evaluation of professional development.

The performance assessments appear to be insufficiently challenging, since the distribution of scores was skewed. 84% of the data managers scored a “1” on the first performance assessment and 94% of the data managers scored a “1” on the second performance assessment. Since a ceiling effect appears to be in effect, it was necessary to look at the data submission element on the field checklist in order to determine the degree to which data managers were able to enter data without error, indicating a transfer of knowledge. For the first data submission, 14.2% of the data was submitted without error. For the second data submission, 71.5% of the data was submitted without error, illustrating an increase of 57.3% between the two submissions. This increase reflects the training and the technical assistance offered through the site visits and through follow-up individual conversations with data managers.

Stage 6 (organizational impact)

Stage 6 measures the organizational impact of the training. This was accomplished through the construction and use of data access and use questionnaires. The questionnaires examine presentation of data, access to data and planning with data which are all cited in the literature on data based decision making as barriers to
use of data in the instructional process (Cromey, 2000; Mason, 2002). The first questionnaire was completed by the data managers (Appendix G). The second was completed by the data consumers (literacy specialists, resource coordinators, principals) (Appendix H). An Analysis of Variance was conducted. The four roles were used for analysis (data managers, literacy specialists, resource coordinators, and principals). Each role was then divided into two groups, reflecting whether the data manager served two or less buildings or three or more buildings. The number of buildings served was not found to be significant for any role, but there was significant variance between the mean scores on the questionnaire for literacy specialists and principals. Literacy specialists probably have the highest expectations for access and use of data, since they work most closely with the classroom teachers. Principals, due to a number of factors, may have the least knowledge or expectation for data access and use. The return rate of the questionnaire was the lowest for the principals. This has been fairly consistent with their attendance and involvement in training sessions and with Reading First-Ohio as a whole. This lack of engagement could be reflective of a lack of interest or even a lack of leadership. Or it could also be reflective of a practice of distributed leadership exhibited by the principals in relation to their building trios. A practice of distributed leadership would be consistent with other comprehensive school reform models similar to Reading First-Ohio such as Success for All, Accelerated Schools Project of America’s Choice (Camburn, Rowan, Taylor, 2004, p. 348). This question would be worthy of further consideration. At any rate, collaborative practice including the building principals and use of the data should be monitored closely as the project proceeds through Year 2. In some instances, data
managers expressed concern that their principals were not involved with the process. Effective collaboration was cited by both Michael Fullan and Dennis Sparks as perhaps the most effective form of staff development (Schmoker, 1999, p. 13) and so it is desirable to foster this collaboration at the building level. This stage is the equivalent of Kirkpatrick’s “Did it make a difference?” stage.

At each stage of the training, indicators of success were present, indicating that the training, overall, was successful in fulfilling its purpose of imparting the knowledge and skills to perform the role of building data manager. Especially noteworthy is the increase in accuracy from the first data submission to the second (+57.3%). Stage 6 in the evaluation model is the highest level of impact of the training and the mean scores on the data access and use questionnaire for all roles was 17.73. A realistic score for this stage of implementation at the end of year 1 would be 16. The total possible points on the questionnaire is 28, so there is still room to grow, but data managers were very explicit in the interviews about what they felt they still needed training on (presentation of data in useable formats, data analysis and interpretation, better understanding of the assessments) and these needs will be the basis for the training for next year. Their perceived needs are consistent with the frequently cited barriers to data use in the literature on data based decision making in schools (Cromey, 2000; Holcomb, 1999; Mason, 2002). This evaluation of the training served a purpose within the Department of Education as it sought to evaluate the Year 1 training to see if the plan and execution was appropriate in meeting the needs of the data managers.
“Results tell us which processes are most effective and to what extent and where processes need reexamining and adjusting” (Schmoker, 1999, p. 4). Some of these adjustments will be discussed in the next section on implications of the study.

**IMPLICATIONS**

This section discusses the implications of the study. Implications for policy, implications for practice and future research will be conveyed.

**Implications for Policy**

Several policy implications can be made as a result of this study. At the level of the Ohio Department of Education, one policy implication could be that a lack of inter-office collaboration is evident to the field as evidenced by the number of data managers who stated that their biggest frustration this year was working with EMIS and the Data Acquisition Sites. In initiatives of the size and scope of Reading First-Ohio, a policy mandating inter-office collaboration, preferably at the grant writing stage, should be implemented. If each office signed off on the proposal prior to its submission, then the intention to collaborate can be documented and offices can be held accountable. Successfully implementing an initiative as large as this, especially with the requirements of data collection and evaluation that are expected, require more than just the five people assigned to the grant from the Office of Reading Improvement. It requires the commitment and collaboration of multiple entities and offices within the Department. Policy should reflect this commitment from the onset.
Also at the Department level, during the subgrant application process, currently a district must acquire sign-off from the building union leadership in order for the building to receive funding from Reading First-Ohio. The Department might consider having a similar sign-off for the building administrators, as this has been perceived as a weakness in the system from many vantage points and was illustrated again through the interviews with the data managers. This would signify commitment on the part of each building administrator to support and carry out the expectations for successful implementation of the program at the building level.

**Implications for further research**

Further research recommendations emanating from this study are numerous. In a narrow sense, the same evaluation model could be used to evaluate training for a new cohort of data managers in Reading First-Ohio. A control group study could be conducted, varying the training between the groups in order to discover the more effective delivery method of training.

The small number of data managers most likely affected results and so the same study could be conducted with a larger number of data managers as districts and buildings are added to the grant to see if the relationship between the assessments at various stages (i.e. knowledge assessment, performance assessment, field checklists) are greater when a larger number of data managers are involved. This would require substantial revision of the knowledge assessments and an increase in the level of difficulty of the performance assessment so that it is sufficiently challenging.
This study could be extended to Year 2, Cohort 1 using an existing evaluation model which considers student achievement results. The assumption would have to be made that data managers are able to have impact on student achievement and by holding data managers accountable for the data within the building, this can and does have effect on student achievement. The organizational impact of the training would then be extended to additionally consider student achievement results.

Similarly, a study could be conducted using the existing evaluation model, but adding a seventh stage measuring student impact. The advantage to this approach is that results of the first six stages from this year could be compared with the results from next year. The other advantage is that Brinkerhoff’s evaluation model does not consider organizationally defining factors in the model such as in Guskey’s evaluation model. Considering organizational factors would be difficult when looking across this entire project.

Case study (i.e. success case) research could be conducted to identify schools which are particularly successful in using data to inform instruction leading to higher achievement results for students. Identifying the prominent features in these successful schools could help develop best practices in using data specific to Reading First-Ohio and elementary literacy instruction more generally.

The process of change could be studied in the organizations participating in Reading First-Ohio. We know that these organizations have historically been extremely low performing. Has that changed? What are the features of this change? Do building data managers contribute to this change and if so, how?
Research which connects adult learning, change within individuals and then change within groups could be interesting. Transformative learning, as defined by Mezirow (1991) and change at the organizational level have similarities. Change and transformative learning both “involve a questioning of assumptions and a fundamental rethinking of premises.” (Imel, 2000, p.3). Learning requires that learners undergo some type of change (Hall and Loucks, 1978). Change occurs first to individuals and then to organizations. Looking at the changes which occur within individuals in Reading First-Ohio (transformative learning) and then change within the organizations would make for an interesting study.

Additionally, both change literature and literature on adult learning talk of reflection as important. Schon (1987) and Mezirow (1991) both discuss reflection as an important step and process in adult learning. Reflection is also important within a change process. Studying the process of reflection at the individual and organizational level within Reading First-Ohio could provide interesting findings on the connection between these processes.

Research could be conducted through the lens of Reading First-Ohio as a comprehensive school reform model. It is not dissimilar to other comprehensive school reform models in literacy such as Success for All or America’s Choice. How does Reading First-Ohio compare to other comprehensive school (i.e. whole school) reform models?

The collaborative processes in Reading First-Ohio could be studied as they were in the Gonzalez study (2002). This would be especially interesting to look at in regard to the use of data in decision-making, since no research exists at this time.
Research in distributed leadership focusing on the building trio could take several forms. Research could focus on the building trio as distributed leadership is studied over the multiple roles of the data manager, the literacy specialist and the resource coordinator. The role of the principal in such a model could be studied exclusively, documenting differences between the role of the building principal in a setting without support staff (literacy specialist, resource coordinator and data manager) and with the support staff in place in Reading First-Ohio buildings.

Research on building leadership could provide interesting insights into the role of the building leader in a model such as Reading First-Ohio. Are principals as unengaged in this process as it appears? If so, why? What would it take to engage them?

The sustainability of effort after grant money ends would be particularly interesting to research, especially in looking at how the role and function of the building data manager is dealt with. Is the position sustained? Is the function absorbed into an already existing position? If so, which positions are most typically utilized for this purpose? Are high levels of student achievement sustained when this structure is in place? What are the most effective structures for sustaining progress as measured by student achievement? Many school initiatives “create temporary, localized flurries of change but little lasting or widespread improvement” (Hargreaves & Fink, 2004). Is Reading First-Ohio different? If so, how? Can these differences be replicated in other programs or practices?
As buildings and districts transition out of the grant, do the formal collaborative teams (i.e. the building trios) continue and become communities of practice (i.e. informal learning teams)? Does the fact that these learning teams were organizationally sanctioned during the grant period impede them from becoming true communities of practice? At this time, the trios are not self-directed—they have a very clear function, role, purpose and agenda. If the teams are successful in transitioning to becoming communities of practice, how do they function? Do they continue to use data within the building? If so, how? Is there effect on student achievement?

This project is full of opportunity to observe adult learning across contexts. As is true with most providers of adult learning opportunities, our project has been busy creating opportunities to satisfy the needs of the adult learners within the project in the various roles. If we stepped back from this delivery mode and carefully considered how adult learners learn, could we perhaps form a new theory or model for adult learning?

Implications for Practice

From the Ohio Department of Education perspective, training following the model used for the training of data managers should continue with modifications. The use of the knowledge assessment should be refined significantly and perhaps eliminated as it did not appear to contribute much to the overall training. This is most likely due to the limitations of the instruments emanating from the lack of opportunity to pilot the instruments. Now that a cohort of data managers exists,
further instruments could be refined through piloting for future use. The performance evaluation, the field checklists as well as the data use questionnaires should be continued and appear to be more effective and more consistent with the literature on adult learning in effectively evaluating knowledge and skills from the training; however, the performance assessment should be altered so that it is sufficiently challenging. The opportunity exists that a hybrid instrument which would capture the positive aspects of the knowledge assessments and would include a performance aspect which would not be limited to data entry could be developed. Additionally, student achievement should be considered in the model beginning in Year 2 of implementation.

This model for the design and evaluation of training was effective and perhaps should be used in other contexts within the Department with similar purposes and demographics of participants. Already it has been requested to be used in the development of training for the resource coordinators in Reading First-Ohio for next year.

At the Department level, training should be planned and established for EMIS coordinators and Data Acquisition Site personnel. This has been recognized as an issue from the field (i.e. the data managers through the interviews). The planning of this training is underway for next year. This year, a technical manual for those serving Reading First-Ohio districts in the capacity of EMIS coordinators was developed. It is clear from the on-going issues that this was not adequate and training for next year is currently being developed through inter-office collaboration within the Department.
From the school and district level, collaborative efforts for data use should continue and be extended. The collaborative learning communities that are beginning to fledge in the funded districts need to be nurtured and supported at the school and district levels as well as from the levels of the Ohio Department of Education and the Reading First-Ohio Center. Establishing plans informed by data should continue in all schools and in all districts. “Goal orientation plus dialogue brings teams closer to their goals. Such dialogue helps teams identify and address instructional and classroom factors that have the best chance of making a difference” (Schmoker, p. 13). The conversations, though, should not just occur at the school and district levels. They must continue and also reach the classroom level. Collaborative teacher conversations should focus on the question, “How will we know when each student has learned?” (DuFour, 2004). Districts should seek to remove barriers to collaborative planning and discussion informed by data. Time barriers that data managers spoke of in the interviews should be examined at the district level and removed, if possible.

And finally, at all levels, practice and conversation should always include children and the effect this effort could have on their lives. Learning to read is a ticket to liberation, just as it was for Brazilian workers in Pedagogy of the Oppressed (Freire, 1995). “We cannot dismiss the impact of these triumphs on human lives, on real children. The ultimate result of such efforts is the life—and community—transforming power that an excellent education bestows on students. We cannot afford to overlook the rich opportunity that schools have to make a difference” (Schmoker, 1999, p. 8).
APPENDIX A
Session Evaluation 1
For each question that follows, please circle the number that represents your reaction to the content of today’s training session according to the scale below. After you have responded, please feel free to include any comments on the question that you would like to offer the training staff.

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1) Presentation 1: Introduction to Reading First- Ohio

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

2) Presentation 2: Role & Responsibility

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

3) Laboratory Demonstration of the Screening Reading Assessment

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

4) Presentation 3: Data Management

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
5) Presentation 4: Research  

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Now we’d like you to think about the extent of your satisfaction with several important components of today’s training. Using the same scale, please circle the number that represents your satisfaction level with the questions which follow. If you have any comments regarding the training component, please feel free to offer them on the lines which follow.

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6) The visual presentation (Microsoft PowerPoint slides):  

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

7) The materials to help you do the job (Training Manual for the SSDT Spreadsheet, the Data Quality Checklist and Log Book):

5)

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

8) The training materials for thought and reflection (the articles and education research book):

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
9) The presentation skills of the presenters:  

1  2  3  4  5

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Thank you very much for your participation in this training program. Please return this sheet to the front desk when completed.
APPENDIX B
Session Evaluation 2
## Reading First- Ohio (RFO) Training for RFO Building Data Managers (BMD) and EMIS Coordinators Evaluation Sheet

For each question that follows, please circle the number that represents your reaction to the *content* of today’s training session according to the scale below. After you have responded, please feel free to include any comments on the question that you would like to offer the training staff.

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10) Structured Brainstorming: Job Role Challenges  

Comments:  
__________________________________________________________________  
__________________________________________________________________  
__________________________________________________________________

11) Progress Monitoring Spreadsheet Participant Performance  

Comments:  
__________________________________________________________________  
__________________________________________________________________  
__________________________________________________________________

12) Wireless Demonstration (IF APPLICABLE)  

Comments:  
__________________________________________________________________  
__________________________________________________________________  
__________________________________________________________________

13) DIBELS Data System Participant Performance (IF APPLICABLE)  

Comments:  
__________________________________________________________________  
__________________________________________________________________  
__________________________________________________________________
Now we’d like you to think about the extent of your satisfaction with several important components of today’s training. Using the same scale, please circle the number that represents your satisfaction level with the questions which follow. If you have any comments regarding the training component, please feel free to offer them on the lines which follow.

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16) The visual presentation (Microsoft PowerPoint slides): 1 2 3 4 5

Comments:

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

17) The materials to help you do the job (Training Manual for the SSDT Spreadsheet): 1 2 3 4 5

Comments:

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
18) The presentation skills of the presenters: 1 2 3 4 5

Comments:
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Thank you very much for your participation in this training program. Please return this sheet to the front desk when completed.
APPENDIX C
Knowledge Assessment 1
Name:

Please place an “X” next to the best answer for each of the following questions.

1. The goal of *Reading First* is
   A.______ All kindergarten students come to school ready to learn.
   B.______ All children will read at or above grade level by the end of grade 3.
   C.______ All participating districts increase academic achievement of students.
   D.______ Ohio implements its English Language Arts Content Standards.
   E.______ All of the above
   F.______ None of the above

2. *Reading First-Ohio* is based upon and influenced by
   A.______ Federal legislation
   B.______ Ohio Literacy Conceptual Framework
   C.______ Ohio English Language Arts Content Standards
   D.______ All of the above
   E.______ None of the above

3. Three program standards must be met for districts to be considered for a *Reading First-Ohio* grant. They are

   A.______ Professional learning; comprehensive and coherent plan design; phonics instruction
   B.______ Professional learning; guided reading; systematic and explicit reading instruction
   C.______ Professional learning; comprehensive and coherent plan design; systematic and explicit reading instruction
   D.______ All of the above
   E.______ None of the above

5. *Reading First* targets which types of school districts?
   A.______ Lowest achieving
   B.______ Highest poverty
   C.______ Highest achieving, lowest poverty
   D.______ Lowest achieving, lowest poverty
   E.______ Lowest achieving, highest poverty
   F.______ Highest achieving, highest poverty

5. The overarching goal of today’s training is
   A.______ To gain a thorough understanding of the different assessment instruments used in *Reading First-Ohio*
   B.______ To better understand the roles within the building trio and their functions within *Reading First-Ohio*
   C.______ To equip building data managers with knowledge and skills to perform their role
   D.______ All of the above
   E.______ None of the above
6. Building data managers should
A.______ Assess all children within a building
B.______ Enter and maintain data for reporting purposes
C.______ Train all teachers in the use of the assessments
D.______ All of the above
E.______ None of the above

7. If a teacher has not assessed students and submitted the data to you, how could this best be handled?
A.______ You agree to assess all the students in the teachers’ classroom
B.______ You inform the principal
C.______ You remind the teacher of the window for assessment
D.______ All of the above
E.______ None of the above

8. The best source of information in understanding your specific role is
A.______ The local district subgrant application
B.______ The Ohio Reading First grant to the U.S. Department of Education
C.______ Federal legislation
D.______ All of the above
E.______ None of the above

9. The three types of assessments which will be reported to the Ohio Department of Education in Reading First-Ohio are
A.______ Screening, outcome, proficiency
B.______ Screening, diagnostic, outcome
C.______ Screening, progress monitoring, outcome
D.______ Screening, progress monitoring, proficiency
E.______ All of the above
F.______ None of the above

10. Scientific based research is best characterized as
A.______ Research which seeks to advocate for a particular methodology
B.______ Research which is objective and systematically collects data through valid and reliable instruments
C.______ Research which is published in recent education journals
D.______ All of the above
E.______ None of the above

11. A building may choose to use data by holding monthly meetings with a building leadership team. In a Reading First-Ohio building, this team might be comprised of:
A.______ All classroom teachers
B.______ All first grade teachers
C.______ The principal and assistant principal
D.______ The principal, data manager, literacy specialist, resource coordinator
E.______ The superintendent, curriculum coordinator, building principal
F.______ None of the above

12. The conversion of data into knowledge is challenged by
A.______ Inadequate data collection systems
B.______ The inability of educators to analyze data
C.______ The resistance of educators to use data in guiding instruction
D.______ All of the above
E.______ None of the above

Ohio Department of Education, Reading First-Ohio, 10-03
13. The purpose of reporting data to the Ohio Department of Education is
   A.______ To report to the U.S. Department of Education in order to demonstrate
   success of the program
   B.______ So that the Superintendent of Public Instruction can decide if Reading First-
   Ohio is worthy of staff commitment and time
   C.______ To assist the Ohio Department of Education in identifying ineffective
   teachers
   D.______ All of the above
   E.______ None of the above

14. Reliability involves
   A.______ Ensuring accuracy
   B.______ Ensuring that a measure measures what you think it should measure
   C.______ Ensuring effectiveness
   D.______ Whether a particular instrument applied repeatedly to the same object would
   yield similar results each time
   E.______ All of the above
   F.______ None of the above

15. Research is important to building data managers in Reading First-Ohio because
   A.______ The federal government will conduct an external review of the program in
   each state
   B.______ The Ohio Department of Education is concerned about the effective
   implementation of Reading First-Ohio at the district and state level
   C.______ As the keeper of student level data, the building data manager must
   understand issues of confidentiality of student information
   D.______ All of the above
   E.______ None of the above

16. A method of storing data once it has been reported to the Ohio Department of Education is
   A.______ As a file on the desktop of your computer
   B.______ In color-coded file folders on your desk, organized by building
   C.______ In a password protected secure file on your computer
   D.______ All of the above
   E.______ None of the above

17. You get a call from a professor at your local university who is really excited about
    your building and district’s involvement in Reading First-Ohio. She would like to study one
    classroom of third graders to look at student achievement and implementation. What should
    you do?
   A.______ Set up time when she can observe in the classroom
   B.______ Send a letter to parents of students asking for their consent for their child’s
   involvement in the research study.
   C.______ Contact your local EMIS coordinator so that you can arrange for the
   transfer of student achievement data to the researcher
   D.______ All of the above
   E.______ None of the above

18. What is the purpose of FERPA?
   A.______ To ensure research standards
   B.______ For EMIS reporting
   C.______ To protect the privacy of students
   D.______ All of the above
   E.______ None of the above
19. It would be unethical to
   A. ______  Include someone in a study without their knowledge
   B. ______  Include someone in a study without their consent
   C. ______  Disclose personally identifiable data about a participant
   D. ______  All of the above
   E. ______  None of the above

20. Which statement best defines your understanding of research
   A. ______  Research begins with data collection
   B. ______  Research has clearly defined beginning and ending points
   C. ______  Some steps in research can be skipped
   D. ______  All of the above
   E. ______  None of the above

21. The purpose of purpose of using the log book in the data entry process is to
   A. ______  Create a record of all data entry activity.
   B. ______  Check accuracy of all data which is entered
   C. ______  Analyze data which is entered
   D. ______  All of the above
   E. ______  None of the above

22. A security breach would occur if
   A. ______  Stacks of unentered TPRI student record sheets were left on the data
              manager’s desk overnight
   B. ______  A custodian checked his e-mail on your computer and accidentally changed
              information stored on the spreadsheet on your computer
   C. ______  The literacy specialist in your building hung the SSDT spreadsheet on
              his/her bulletin board for quick reference
   D. ______  All of the above
   E. ______  None of the above

23. Data entry, for the purpose of Reading First-Ohio is
   A. ______  Correct calculation of assessment data
   B. ______  Reporting information to the Ohio Department of Education
   C. ______  Converting paper-based assessment data to electronic records
   D. ______  All of the above
   E. ______  None of the above

24. For building data managers, utilization of data in Reading First-Ohio can be best summarized as
   A. ______  Using data collected to influence classroom practices
   B. ______  Holding monthly meetings with the building principal, literacy specialist
              and resource coordinator
   C. ______  The external evaluator using building data to evaluate effectiveness of
              implementation
   D. ______  All of the above
   E. ______  None of the above

25. The SSDT spreadsheet is accessed by the building data manager
   A. ______  Through EMIS
   B. ______  Through district e-mail
   C. ______  Through the Internet
   D. ______  All of the above
   E. ______  None of the above

Ohio Department of Education, Reading First-Ohio, 10-03
APPENDIX D
Knowledge Assessment 2
Place an “X” next to the best answer for each of the following questions.

1. The purpose of data collection in Reading First-Ohio is
   A. ______ To determine which teachers are doing a good job and which are not
   B. ______ To monitor student progress
   C. ______ To supply the principal with information for evaluation purposes
   D. ______ To earn federal money for a new reading series
   E. ______ All of the above
   F. ______ None of the above

2. For kindergarten students in a Reading First-Ohio building, data would be collected at
   A. ______ Six points in the year
   B. ______ Four points in the year
   C. ______ Three points in the year
   D. ______ No points in the year
   E. ______ All of the above
   F. ______ None of the above

3. More frequent assessment of a student would most likely occur in which of the following situations?
   A. ______ A student was performing above grade level expectations
   B. ______ A student was performing on target for grade expectations
   C. ______ A student has an overbearing and demanding parent
   D. ______ The student was performing below grade level expectations
   E. ______ All of the above
   F. ______ None of the above

4. The primary purpose for collecting DIBELS data for K-3 students is to
   A. ______ Identify students in need of a MFE for possible special education placement
   B. ______ To determine if a child has mastered particular indicators
   C. ______ To monitor progress of student learning
   D. ______ To identify which students are at risk for experiencing reading difficulty
   E. ______ All of the above
   F. ______ None of the above

5. A line graph of individual student oral reading fluency over multiple assessment points would be most reflective of
   A. ______ Learning trajectory
   B. ______ Teacher effectiveness
   C. ______ Strength of core reading program
   D. ______ Power of a specific intervention
   E. ______ All of the above
   F. ______ None of the above

6. Which measure of central tendency is the best to use in almost all situations?
   A. ______ Mean
   B. ______ Median
   C. ______ Mode
   D. ______ All of the above
   E. ______ None of the above

7. Your building principal asks for information about where a grade level stands on the first progress monitoring assessment. What data would you supply?
   A. ______ A frequency distribution of the scores achieved
   B. ______ A histogram depicting the data
   C. ______ A percentage of students at/below the benchmark
   D. ______ A box plot to show group scoring in relation to benchmarks for each subtest
   E. ______ All of the above
   F. ______ None of the above
8. What information is best represented by a frequency distribution chart?
A. _____ The percentage of students at/below a particular benchmark
B. _____ Which students are in need of intervention
C. _____ The mathematical center of a distribution
D. _____ The number of times each score occurs in a data set
E. _____ All of the above
F. _____ None of the above

9. A major responsibility of a building data manager is to
A. _____ Monitor student progress
B. _____ Discuss teacher effectiveness in relation to student progress
C. _____ Help teachers learn to use technology
D. _____ Assess students
E. _____ All of the above
F. _____ None of the above

10. The SSDT spreadsheet is primarily used to
A. _____ Create visual displays of data for instructional use
B. _____ Disaggregate data by the “No Child Left Behind” subgroups by the data manager
C. _____ Report data to the Ohio Department of Education
D. _____ Demonstrate compliance with Reading First-Ohio requirements
E. _____ All of the above
F. _____ None of the above

11. If a teacher supplies incomplete information, you should
A. _____ Tell the literacy specialist
B. _____ Return the assessment to the teacher for completion
C. _____ Tell the principal
D. _____ Talk about the teacher during lunch in the lounge
E. _____ All of the above
F. _____ None of the above

USE CLASS LIST REPORT: ADAMS K#2 FOR THE FOLLOWING QUESTIONS

12. A teacher has asked for your assistance so that he can make sense of his class data. He has his class list report. From this report, he might determine
A. _____ Brittany, Rachel, Serena and Kyle would benefit from small group intervention working on letter names
B. _____ Overall, the primary needs of this class lie in the area of vocabulary
C. _____ Benjamin, Kyle, Shania and Brittany should be placed in a group together and would benefit from guided oral reading using decodable text
D. _____ His students are doing well. He should continue his current strategies
E. _____ All of the above
F. _____ None of the above

13. The same teacher might consider
A. _____ Working with Brittany individually on a regular basis
B. _____ Working with Brittany, Rachel, Serena and Kyle in a small group on letter names
C. _____ Working with Brittany, Mathew, Sarah and Olivia on segmenting
D. _____ Working with Brittany, Mathew, Rachel, Sarah, Serena, Kyle and Kyler on letter sounds
E. _____ All of the above
F. _____ None of the above
14. A teacher has been informed that she is going to have four high school students come to her class twice a week to tutor students. Based only on student data, which four students would you recommend the tutors work with?
   A. _____ Judy, Samantha, Kathleen, Kai
   B. _____ Judy, Samantha, Kathleen, Mariah
   C. _____ Judy, Samantha, Kathleen, Christian
   D. _____ Judy, Samantha, Kathleen, Nicholas
   E. _____ All of the above
   F. _____ None of the above

15. This same teacher also has a retired reading teacher who volunteers in her classroom every morning for an hour. What do you think the best way to utilize this resource would be, based on the data?
   A. _____ Read with Judy, Samantha and Kathleen every day
   B. _____ Work with small groups of “at-risk” students in initial sounds, learning letter names, segmenting/blending and letter sounds/phonics
   C. _____ Assess students
   D. _____ Copy materials for the teacher
   E. _____ All of the above
   F. _____ None of the above

16. This class appears to have the most need of practice with which skill?
   A. _____ Learning letter names
   B. _____ Initial consonant sounds
   C. _____ Segments
   D. _____ Letter sounds/phonics
   E. _____ All of the above
   F. _____ None of the above

17. Samantha’s parents are coming in for her parent-teacher conference. The teacher has looked over the data, but wants to check her interpretation with you. Based on the data displayed on Samantha’s student report, what observations would you make about Samantha’s progress?
   A. _____ Her progress is decreasing and increasing rate
   B. _____ Her progress is increasing at a decreasing rate
   C. _____ Her progress is decreasing steadily
   D. _____ Her progress is increasing steadily
   E. _____ All of the above
   F. _____ None of the above

18. You could summarize Samantha’s overall achievement in relation to grade level target goals as:
   A. _____ Substantially above target goals
   B. _____ Somewhat above target goals
   C. _____ Substantially below target goals
   D. _____ Somewhat below target goals
   E. _____ All of the above
   F. _____ None of the above
USE HALI D. STUDENT REPORT FOR THE FOLLOWING QUESTIONS

19. Hali’s mother contacts her classroom teacher about Hali’s overall progress in reading. Hali was tutored during the summer between her first grade and second grade year, but not between second and third grade. She is contemplating tutoring again and would like to know what the teacher thinks. The teacher asks you to look at the data with her. Based on Hali’s student report, you could make what observations?
   A. _____ Hali appears to have benefited from tutoring between first and second grade
   B. _____ Hali suffered significant summer reading loss between second and third grade
   C. _____ Hali’s progress at the end of third grade is just barely within target goals. If she experiences the same type of summer reading loss between third and fourth grade, she will begin fourth grade well below target goals
   D. _____ All of the above
   E. _____ None of the above

20. Hali’s mother has decided to pursue summer tutoring for Hali. The tutor contacts the classroom teacher for ideas of what Hali needs to work on. The most beneficial area(s) would be
   A. _____ Initial sounds (phonemic awareness)
   B. _____ Letter names
   C. _____ Phoneme segmentation (phonemic awareness)
   D. _____ Letter sounds (phonics)
   E. _____ All of the above
   F. _____ None of the above

USE KINDERGARTEN SCHOOL REPORT FOR ADAMS ELEMENTARY: PHONEME SEGMENTATION FLUENCY FOR THE FOLLOWING QUESTIONS

21. The principal of Adams Elementary summons you to the office to interpret data for him. He beings by telling you he is a “whole language person” and isn’t so sure this systematic, explicit phonemic awareness and phonics instruction really works. He has the school report for phonemic awareness fluency in front of him. What would you say to him?
   A. _____ You could agree that whole language is the best way to instruct students and substantiate your position with data from this report, which shows that systematic, explicit instruction in phonemic awareness isn’t making any difference
   B. _____ Explain that at this point, you can not make a determination whether systematic, explicit phonemic awareness instruction makes a difference in student achievement
   C. _____ Explain that over three quarters of kindergartners at Adams Elementary are demonstrating development in phonemic awareness appropriate to their grade level benchmarks at this point in the year (January).
   D. _____ All of the above
   E. _____ None of the above

22. This principal wants to know how many students need intervention in phonemic awareness. What do you tell him?
   A. _____ Five students are in need of intensive intervention in phonemic awareness
   B. _____ Sixteen students are in need of intensive intervention in phonemic awareness
   C. _____ Twenty one students are in need of intensive intervention in phonemic awareness
   D. _____ All of the above
   E. _____ None of the above
23. Your trio is meeting at Adams Elementary. The topic of discussion is whether kindergarten students, as of January, would benefit from working with high school tutors on learning letter names. What does the data indicate?
   A. _____ The majority of students are achieving in this area. There is no need for additional support
   B. _____ There are approximately twenty students who appear to be in need of intensive intervention in this area. High school tutors and additional classroom support would be an appropriate combination in this instance
   C. _____ Students will learn this skill when they are developmentally ready. At this point, there is no need to intervene
   D. _____ The core reading series is weak in this area. The school only needs to buy better materials, not work with students
   E. _____ All of the above
   F. _____ None of the above

24. The tutoring coordinator from the high school calls and needs to know exactly how many tutors are needed. What do you recommend in order to serve the students in the greatest need?
   A. _____ Nineteen
   B. _____ Twenty one
   C. _____ Twenty nine
   D. _____ Forty eight
   E. _____ All of the above
   F. _____ None of the above

25. The trio at Adams Elementary is meeting again (aren’t they great?). When the initial Reading First-Ohio grant was written, one of the weaknesses in the core reading program was in phonological awareness at kindergarten. Your district decided not to supplement in this area until more data was available. Based on the Kindergarten School Progress Report, Adams Elementary, 2001-2002, Initial Sound Fluency, what would be the best course of action?
   A. _____ Supplementing in this area would be a waste of money
   B. _____ Supplementing in this area appears to be an appropriate use of funds
   C. _____ There is no way to tell from this data
   D. _____ Investigate whether the data from the other five RF-O buildings in your district looks similar
   E. _____ All of the above
   F. _____ None of the above
APPENDIX E
Field Checklist 1
## Site Visits

### Data Manager:

### Building(s):

### Date:

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<thead>
<tr>
<th>Is data secure? How?</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has screening data been entered into the spreadsheets?</td>
<td>Comments:</td>
</tr>
<tr>
<td>Were there any issues with entering data into the spreadsheets?</td>
<td>Comments:</td>
</tr>
<tr>
<td>Was a process used for checking the data for accuracy? Describe.</td>
<td>Comments:</td>
</tr>
<tr>
<td>Use of log book</td>
<td>Comments:</td>
</tr>
<tr>
<td>Use of field notes</td>
<td>Comments:</td>
</tr>
<tr>
<td>Process established for sharing data</td>
<td>Comments:</td>
</tr>
</tbody>
</table>
### Issues encountered by data manager:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Met</th>
<th>Partially met</th>
<th>Did not meet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Timeliness</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Cross check for accuracy</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Documentation</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Process for sharing</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Data submission (accuracy):</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Any follow up required?

Attach documentation (if applicable)

TOTAL: _________
APPENDIX F
Field Checklist 2
**Site Visits**

**Data Manager:**

**Building(s):**

**Date:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is DM meeting with trio meeting? Frequency? Sharing of data?</td>
<td>Comments:</td>
</tr>
<tr>
<td>What is the communication about data with the principal? Describe</td>
<td>Comments:</td>
</tr>
<tr>
<td>Visual Representation of data (student, class, group, etc.)</td>
<td>Comments:</td>
</tr>
<tr>
<td>How often is the DM communicating with staff about data?</td>
<td>Comments:</td>
</tr>
</tbody>
</table>

**Issues encountered by data manager:**
<table>
<thead>
<tr>
<th>Category</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of trio meeting</td>
<td>Exceeds</td>
<td>Met</td>
<td>Partially met</td>
<td>Did not meet</td>
</tr>
<tr>
<td>Frequency of communication with principal</td>
<td>Exceeds</td>
<td>Met</td>
<td>Partially met</td>
<td>Did not meet</td>
</tr>
<tr>
<td>Visual Representation of data</td>
<td>Exceeds</td>
<td>Met</td>
<td>Partially met</td>
<td>Did not meet</td>
</tr>
<tr>
<td>Frequency of communication of data</td>
<td>Exceeds</td>
<td>Met</td>
<td>Partially met</td>
<td>Did not meet</td>
</tr>
<tr>
<td>Submission of data (accuracy)</td>
<td>Met</td>
<td>Partially met</td>
<td>Did not meet</td>
<td></td>
</tr>
</tbody>
</table>

Follow up required?

Attach documentation (if applicable)

TOTAL: _________________________
APPENDIX G
Data Access and Use Questionnaire
(Data Managers)
Questionnaire regarding Data Access and Use

Please check the answer that best reflects your current practice and thoughts.

1. Our building trio meets

   ___ Not at all (1)
   ___ Less than once per month (2)
   ___ Monthly (3)
   ___ Every other week (4)
   ___ Weekly or more (5)

2. Our principal is able to participate in these meetings

   ___ Not at all (1)
   ___ Seldomly (2)
   ___ Some of the time (3)
   ___ Most of the time (4)
   ___ Always (5)

3. I am able to supply information to building level staff on group progress (school, grade level, classroom)

   ___ Not at all (1)
   ___ Less than once per month (2)
   ___ Monthly (3)
   ___ Every other week (4)
   ___ Weekly or more (5)

4. I am able to supply information to building level staff on individual student progress

   ___ Not at all (1)
   ___ Less than once per month (2)
   ___ Monthly (3)
   ___ Every other week (4)
   ___ Weekly or more (5)

5. I am able to supply data to building level staff which illustrates individual progress relative to specific interventions so that the effectiveness of an intervention can be evaluated for an individual student.

   ___ Yes
   ___ No

Please continue on other side.
6. Our building trio discusses core reading materials and how data reflects the strengths/weaknesses of the core materials.
   ___ Yes
   ___ No

7. Our building trio discusses supplemental materials and how data reflects the strengths/weaknesses of the supplemental materials.
   ___ Yes
   ___ No

8. Our building trio discusses intervention materials and how the data reflects the strengths/weaknesses of the intervention materials.
   ___ Yes
   ___ No

9. Our building trio discusses the effectiveness of interventions against data.
   ___ Yes
   ___ No

10. I feel I am accessible to building level staff.
    ___ Yes
    ___ No

11. I am able to provide data to building level staff in a format that they are able to understand.
    ___ Yes
    ___ No

   Please give an example:

12. I am able to provide data to building level staff in a format that they are able to use to drive instruction.
    ___ Yes
    ___ No

   Please give an example:

Comments:
APPENDIX H
Data Access and Use Questionnaire
(Data Consumers)
Questionnaire regarding Data Access and Use

Please check the answer that best reflects your current practice and thoughts.

1. **Our building trio meets**
   - Not at all (1)
   - Less than once per month (2)
   - Monthly (3)
   - Every other week (4)
   - Weekly or more (5)

2. **Our principal is able to participate in these meetings**
   - Not at all (1)
   - Seldomly (2)
   - Some of the time (3)
   - Most of the time (4)
   - Always (5)

3. **Our data manager supplies information on group progress (school, grade level, classroom)**
   - Not at all (1)
   - Less than once per month (2)
   - Monthly (3)
   - Every other week (4)
   - Weekly or more (5)

4. **Our data manager supplies information on individual student progress**
   - Not at all (1)
   - Less than once per month (2)
   - Monthly (3)
   - Every other week (4)
   - Weekly or more (5)

5. **Our data manager has been able to supply data which illustrates individual progress relative to specific interventions so that the effectiveness of an intervention can be evaluated for an individual student.**
   - Yes
   - No

Please continue on other side.
6. Our building trio discusses core reading materials and how data reflects the strengths/weaknesses of the core materials.

___ Yes
___ No

7. Our building trio discusses supplemental materials and how data reflects the strengths/weaknesses of the supplemental materials.

___ Yes
___ No

8. Our building trio discusses intervention materials and how the data reflects the strengths/weaknesses of the supplemental materials.

___ Yes
___ No

9. Our building trio discusses the effectiveness of interventions against data.

___ Yes
___ No

10. I feel I have access to my building data manager.

___ Yes
___ No

11. My building data manager is able to provide data to me in a format that I am able to understand.

___ Yes
___ No

12. My building data manager is able to provide data to me in a format that I can use to drive instruction.

___ Yes
___ No

Comments:
APPENDIX I
Script for Data Access and Use Survey
(Data Managers)
Script for Data Managers’ Questionnaire

Good afternoon. As part of training exercises in Reading First-Ohio, data managers have participated in a number of training sessions. At the onset of the program, research was conducted to identify similar training programs. None were located and so the Ohio Department of Education designed training which was felt would give those functioning as data managers at Reading First-Ohio sites the skills they needed in order to meet their job responsibilities. Since this training procedure is new, evaluation is necessary to see that it had the desired effects. This is NOT an evaluation of any data manager, but is an evaluation of the TRAINING conducted for data managers so that necessary changes can be made in order to best prepare future data managers for their role and responsibilities.

Your help in examining the training for data managers is being requested. We would like to know if the training enabled you to fulfill the responsibilities of your role as data manager. This is part of a research study being conducted at The Ohio State University. Your participation in this questionnaire is optional. The answers you will give in this questionnaire will be used in this study. No individuals nor sites will be identified in the study. Data will only be reported in an aggregated format. Your answers will provide valuable feedback about the training you participated in during the course of the year. Does anyone have any questions? (Answer questions, if necessary.)

If you agree to participate in this study, please complete the questionnaire and place it in the file folder located in the middle of your table. Thank you.
APPENDIX J
Script for Data Access and Use Questionnaire
(Data Consumers)
Script for Questionnaires for Literacy Specialists, Resource Coordinators, Principals

Good afternoon. As part of training exercises in Reading First-Ohio, data managers have participated in a number of training sessions. At the onset of the program, research was conducted to identify similar training programs. None were located and so the Ohio Department of Education designed training which was felt would give those functioning as data managers at Reading First-Ohio sites the skills they needed in order to meet their job responsibilities. Since this training procedure is new, evaluation is necessary to see that it had the desired effects. This is NOT an evaluation of any data manager, but is an evaluation of the TRAINING conducted for data managers so that necessary changes can be made in order to best prepare future data managers for their role and responsibilities.

Your help in examining the training for data managers is being requested. We would like to know if the training enabled data managers to help you better understand the data collected in this project and to display the data in a useable, accessible format. This is part of a research study being conducted at The Ohio State University by Michele Evans-Gardell. Your participation in this questionnaire is optional. The answers you will give in this questionnaire will be used in this study. No individuals nor sites will be identified in the study. Data will only be reported in an aggregated format. Your answers will provide valuable feedback about the training conducted which was conducted for data managers during the course of the year. Does anyone have any questions? (Answer questions, if necessary.)

If you agree to participate in this study, please complete the questionnaire and place it in the file folder located in the middle of your table. Thank you.
APPENDIX K
Phone Interview Protocol
Name
Years of Experience
Most Recent Position
How many years in that position

Interview Protocol
Data Managers
Reading First-Ohio

(Interviewer will explain to the building data manager that this information is confidential and will only be used for future planning efforts in designing training for building data managers)

What has been your experience with building trio meetings?

What is typically discussed at your building trio meetings?

How do you typically supply information on individual student progress? For example, charts, graphs, narrative, etc.

How do you typically supply information on group progress? For example, charts, graphs, narrative, etc.

How do you typically supply information on the effectiveness of intervention? For example, charts, graphs, narrative, etc.

How do you supply information on the effectiveness of materials? For example, charts, graphs, narrative, etc.

Do you feel you have acquired the knowledge and skills to provide data in a useful format to building level staff?
(If necessary, ask if the reply can be expanded)
Do you feel you have the tools necessary to provide data in a useful format to building level staff? (If necessary, ask if the reply can be expanded)

What evidence have you seen that data is being used to inform classroom instruction?

What has been most challenging for you this year in your role as building data manager?

What has been most rewarding to you this year as building data manager?

What do you feel you need more training on?

Is there any other information that you wish to share with me regarding your experience this year?

Thank you for your time and cooperation.
APPENDIX L
Script for Phone Interviews
Name of Participant:

Date of Interview:

Time of Interview:

Scripted Introduction for Phone Interviews with Data Managers

Good morning/afternoon. You will be participating in a phone interview about your experience in training this year as a data manager in Reading First-Ohio. Your participation in this interview is optional. The answers you will give in this interview will be used for research purposes at The Ohio State University. The research being conducted is a study of the training that was developed by the Ohio Department of Education for data managers in Reading First-Ohio. Your answers will provide valuable feedback about the training conducted which you participated in during the course of the year.

Do you understand that your participation in this interview is optional? (Participant responds Yes/No. If response is “Yes,” then proceed. If response is “No,” ask participant for clarification/answer questions.)

Your answers during this interview will be used for research purposes to examine the training conducted for you and for others serving in the role of data manager. In this research, no individuals nor sites will be identified or revealed. The data will only be presented in aggregate form. Do you understand that the responses you give during this interview will be used for research purposes? (Participant responds Yes/No. If response is “Yes,” then proceed. If response is “No,” ask participant for clarification/answer questions.)

I will be audiotaping this interview so that an accurate transcription can be produced and proper analysis of the interview can be completed. Do you agree to having this interview audiotaped? (Participant responds Yes/No. If response is “Yes,” then proceed. If response is “No,” ask participant for clarification/answer questions.)

Do you agree to participate voluntarily in this interview? (Participant responds Yes/No. If response is “Yes,” then proceed with interview. If response is “No,” then respond “Thank you for your time. Goodbye.”)


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