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DOES ONE SCHOOL DISTRICT'S PROFESSIONAL DEVELOPMENT MODEL LEAD TO IMPROVED STUDENT ACADEMIC ACHIEVEMENT

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By

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PROFRESSIONAL DEVELOPMENT MODEL LEAD TO
IMPROVED STUDENT ACADEMIC ACHIEVEMENT

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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Abstract

Educating today's students is dramatically different from educating students decades ago (Healy, 1990). Professional development is often seen as the bridge that empowers teachers to enhance their professional knowledge and practices in order to meet current students' needs. The purpose of this study was to investigate the effects of professional development on classroom teachers at the school district level. Two research questions were addressed:

1. How effective are professional development programs (Differentiation, Tribes Training, and Dr. Lee Jenkins Model) in a suburban/metropolitan school district?
2. What impact do these three professional development programs have on student academic achievement in this school district?

These questions are significant because school districts spend a great deal of money training teachers each year in professional development programs. Due to recent budget cuts, the money might be better spent in other areas if the programs aren't being used in the classroom and if they don't impact student achievement. The study method included coding the qualitative data and using SPSS Statistical Analysis Software to conduct a t-test with three dependent samples (Differentiation vs. Dr. Lee Jenkins Model, Differentiation vs. Tribes Training, and Dr. Lee Jenkins Model vs. Tribes Training) to determine each sample's significance. Data was obtained from 47 classroom teachers.

The results of this study contribute to narrowing the gap that is documented in the research literature concerning the true impact of professional development at the school district level. In addition, this study attempts to describe those aspects of professional development that may make significant changes in the knowledge, skills, practices, and attitudes of teachers with the ultimate goal of improving student learning.

CHAPTER I: INTRODUCTION

What prevents a scholar from obtaining a teaching degree, then teaching students in the same manner for the next 30 years? This question has intrigued me ever since I was in the third grade. Because I grew up in a small town, my teacher had also taught my mother when she was in the third grade. I remember my mother commenting that the classroom environment, rules, discipline policy, and even the teacher's appearance were exactly the same as when she sat in my seat 22 years earlier! Today, almost all states in the United States require some form of continuing education for teachers. One way for teachers to continue their education and to be exposed to new teaching methods and ideas is through professional development. More than at any time in recent history, teachers' professional development is being viewed as the key ingredient in improving U.S. schools (Sykes & Darling-Hammond, 1999). The perceived importance of professional development is directly related to the ambitious nature of the reform goals and standards that have been put into place over the past decade by various subject-matter organizations (e.g., National Council of Teachers of Mathematics {NCTM}, 1989), state education departments, and professional boards (e.g., National Board for Professional Teaching Standards, 1989). It is now widely accepted that meeting these goals and standards will require a great deal of learning on the part of practicing teachers, the vast majority of whom were taught and learned to teach under a different paradigm of instruction and learning. The type of learning that will be required has been described as transformative which

means requiring changes in deeply held beliefs, knowledge, and habits of practice (Thompson & Zeuli, 1999). The concept that professional development outcomes can be reasonably linked to outcomes in student learning is a fundamental premise behind the accountability for such activities and processes (Guskey & Sparks, 1997; Ward, St. John & Laine, 1999).

The major national report on teacher reform, "Tomorrow's Teachers" (Holmes Group, 1986) emphasized the need for teachers to continue to learn. There was increasing recognition that school reform and professional development were integrally related. However, despite a rich literature on adult learning and human development which supported teachers' need for a wide array of opportunities to construct their own understandings and theories in a collaborative setting, top down mandates had frequently left teachers out of the reform process. It is argued that effective professional development should be tied directly to the daily life of the classroom and grounded in the questions and concerns of teachers (Novick, 1996). Teachers have often been excluded from the process of both planning reforms and the professional development opportunities necessary to implement them (Lieberman, 1995).

Statement of the Problem

Professional development is the bridge that allows educators to enhance their professional knowledge and practices. Researchers have attempted to determine the true impact of professional development, but have met with little success (Guskey, 1997). One cannot get ironclad proof as to whether or not

professional development improves student performance (Guskey, 2000). In order to obtain proof, one would have to eliminate all other factors that could have caused the change. Since most schools are engaged in systemic reform initiatives that involve the simultaneous implementation of multiple innovations (Fullan, 1992), isolating the effects of a single program is usually impossible. However, Guskey (2000) stated, "In the absence of proof, you can collect very good 'evidence' about whether or not professional development is contributing to specific gains in student learning" (p.87).

Theoretical Rationale

Professional development is a critically important factor in the quest to improve education (Sykes & Darling-Hammond, 1999). The focus of measuring the effects of professional development in terms of changes in the knowledge, skills, attitudes, and beliefs of teacher participants has grown in recent years. In order to improve student learning, professional development must first have an impact on teachers who participate. The evaluation of teacher acquisition of knowledge and skills, and subsequent changes in attitudes and beliefs, is pivotal to successful implementation which precedes improvements in student learning (Guskey, 2000). According to Guskey (2000), a well-designed evaluation is the most important indicator of the effectiveness of professional development programs and can also be used to improve future programs.

Purpose of the Study and Research Questions

The ever-changing student population necessitates teachers to engage in continuous improvement and changes in classroom practices. Professional development can become the bridge that empowers teachers to enhance their professional knowledge and practices in order to meet current students' needs.

The purpose of this study is to investigate the effects of professional development on classroom teachers at the school district level. Two research questions are addressed:

1. How effective are professional development programs (Differentiation, Tribes Training, and Dr. Lee Jenkins Model) in a suburban/metropolitan school district?
2. What impact do these three professional development programs have on student academic achievement in this school district?

These questions are important because school districts spend a great deal of money and time training teachers each year in professional development programs. Due to recent budget cuts, the money might be better spent in other areas if the programs aren't being used in the classroom and especially if they don't impact student achievement.

The following terms will be used in this study:

Beliefs and Attitudes are understandings, thoughts, judgments, and values that teachers hold concerning education, teaching, and learning that guide behavior.

Evaluation is the systematic investigation of merit or worth (Guskey, 2000).

Instructional Practices are observable behaviors including strategies, methods, and techniques used to teach learning outcomes.

Knowledge and Skills are the understanding of theory and rationale behind new content and the ability to use new knowledge with students in the classroom setting.

Professional Development is the processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might improve the learning of students (Guskey, 2000).

Student Learning is observable learning outcomes achieved by students including knowledge, skills, behaviors, and attitudes.

Limitations

A survey was distributed to the 83 classroom teachers who had participated in the most recent professional development program in the areas of Differentiation, Dr. Lee Jenkins Training, and Tribes Training. This decision resulted in not only a small sample size, but did not allow participants to be chosen at random. Choosing 21 participants at random from the 47 completed surveys to conduct the interviews further limited the sample population. An additional limitation of the survey is that it contained only one Likert Scale question on which a dependent samples t-test could be conducted. The response rate of the teachers who participated in the study was a critical factor in obtaining meaningful results that might be generalized throughout the school district. It is

possible that the teachers who chose to complete and return the survey and/or participate in the interview may or may not have had strong feelings one way or the other about the professional development programs.

Survey methodology has inherent disadvantages that may also affect the legitimacy. As noted by Gall, Borg, & Gall (1996), it must be assumed that all survey questions were understood by the respondents as the researcher is unable to go back and revise questions after administration. In addition, Isaac & Michael (1997) stated that surveys are reactive in nature, may produce skewed or artificial response sets, and are vulnerable to under-rater or over-rater bias.

While the results of this study would reflect the generalizability in the selected school district, it would be difficult to confidently generalize the results beyond the sample to other populations.

Conclusions

As noted earlier, professional development can become the bridge that empowers teachers to enhance their professional knowledge and practices in order to meet current students' needs. However, the ongoing criticism of professional development programs and lack of measurable results call for improvement in evaluation methods. It is expected that the results of this study will contribute to narrowing the gap that is documented in the research literature concerning the true impact of professional development at the school district level. In addition, this study attempts to describe those aspects of professional development that may

make significant changes in the knowledge, skills, practices, and attitudes of teachers with the ultimate goal of improving student learning.

Chapter I provides the introduction and context for the present study. Chapter II describes the background for the study by examining the literature on professional development. The research context, data collection, procedures, and data analysis techniques is the focus of Chapter III. Chapter IV presents results and analysis of the professional development survey and interviews. The final chapter includes a summary of the major findings of this research with a discussion, recommendations, and conclusions.

CHAPTER II: REVIEW OF LITERATURE

A significant body of research literature in the area of professional development exists and provides the basis for this study. This chapter outlines the history of professional development, professional development today, cost of professional development programs, and evaluating professional development programs.

History of Professional Development

Professional development programs existed long before funding began in 1981 (Hoeltzel, 1989). Many trends attracted the attention of educators during the 20th century, thereby influencing professional development programs. Francis W. Parker (1837-1902), a pioneer of the progressive movement, became the superintendent in Quincy, Massachusetts in 1875 (Zimmerman, 2002). His philosophy of education was influenced by the ideas of Horace Mann and John Dewey. Francis Parker developed the Quincy Plan, which abandoned prescribed curricula, rote memorization, and harsh pupil discipline and replaced them with meaningful learning and active understanding of concepts. Parker emphasized the need to shift from a curriculum-centered and teacher-centered education to one that centered on the learner. In 1879, the model was legitimized as successful when the results of state examinations in the traditional subjects were released and Quincy students' scores surpassed the scores of other school children in Massachusetts (Zimmerman, 2002).

In 1957 the launch of Sputnik I by the Soviet Union had a huge effect on American public opinion (Launius, 2004). The event created an illusion of a technological gap and provided the motivation for increased spending for technical and scientific educational programs. In 1958, the National Defense Education Act (NDEA) provided aid to education in the United States at all levels, public and private (Epstein, 2001). NDEA was instituted primarily to stimulate the advancement of education in science, mathematics, and modern foreign languages; but it has also provided aid in other areas, including technical education, geography, English as a second language, counseling and guidance, school libraries and librarianship, and educational media centers. The Elementary and Secondary Education Act (ESEA), designed by the Commissioner of Education Francis Keppel, was passed on April 9, 1965 (Lazerson, 1987). This piece of legislation constituted the most important educational component of the 'War on Poverty' launched by former President Lyndon B. Johnson. Through special funding (Title I), it allocated large resources to meet the needs of educationally deprived children, especially through compensatory programs for the poor.

The Phonics vs. Whole Language controversy began in 1967 and is still ongoing today (Solomita, 1999). Phonics consists of teaching the sounds associated with the letters of the alphabet and children learn to read by sounding out new words. The whole language approach consists of teaching whole words using the flash-card method. The focus is not on the individual letters but on the

meaning of the word and its overall shape. Children learn to recognize entire words by sight (sight words) without breaking them into parts.

In 1983, A Nation at Risk played a key role in nation-wide education reform. After studying the American educational system, the National Commission on Excellence in Education published this federal report (Finn, 1989). The report claimed that American students were not studying the right subjects, were not working hard enough, were not learning enough, and their schools suffered from slack and uneven standards. This report also warned that our social structure would crack, our culture erode, our economy decline, and our national defenses would weaken if the United States did not make immediate attempts to remedy the situation by finding a cure for our fatally-ill education system.

In-service education, staff development, professional development, and human resource development are a few names it has gone by during the past 20 years (Sparks, 1994). Professional Development is currently being viewed as the key ingredient in improving U.S. schools (Sykes & Darling-Hammond, 1999). Over the past two decades, policymakers have called for improvements in the academic performance of U.S. students. Many educational reformers, particularly those associated with the standards movement, believe the key to improving student performance lies in improving the schools (Wenglinsky, 2002).

Beginning with the Teacher Reform Act of 1980, local school district professional development programs have made continuing education and in-

service training an important component for school improvement (Hoeltzel, 1989). In the 1981-82 school year, districts began receiving funds for the exclusive purpose of staff development in-service activities and for planning staff development programs (Ruhman, 2002). The amount of money varies depending on the previous year's average daily attendance and the yearly state aid appropriations. Up to 5% of each year's allocation may be used for the administration of the staff development programs. Staff development funds can be used in the following ways (Hoeltzel, 1989):

1. Professional development cooperatives and network fees
2. Materials used in a staff development in-service
3. Consultant fees
4. Substitutes to enable teachers to participate as presenters or participants in approved staff development activities
5. Development of a staff development resource library
6. Rental or purchase of films or tapes to be used for staff development in-service
7. Reimbursement for registration fees or tuition
8. Attendance at professional conferences on staff development (ex. National Staff Development Council or National Council of States on In-service Education)

Generally, the local board of education is responsible for establishing staff development programs for the certified and licensed teachers as well as the

administrators employed by the district. The program will be adopted based upon recommendations of the staff development committee, which is appointed by the school board. This committee is made up of classroom teachers, administrators, and parents of the local school district. This committee also consults with higher education instructors. All certified and licensed teachers must meet the staff development requirements established by the local school board. Failure to meet these requirements may be grounds for non-renewal of the teacher's contract and/or non-consideration of salary increments (Hoeltzel, 1989).

During the 1987-1988 school year, state regulations required school districts to adopt a staff development plan every four years in order to receive accreditation by the State Board of Education. In the same school year, staff development committees were encouraged to evaluate the local staff development plan to assess whether they were meeting identified needs, whether these needs were still valid, and if new needs had occurred. The recommended evaluative questions were (Hoeltzel, 1989):

1. Was the activity directly related to an identified need?
2. Was the activity useful and informative?
3. Was the presentation effective and interesting?
4. Does the participant need additional in-service in the area?
5. Was the activity cost-effective?

In order to determine whether program activities were addressing the objectives and meeting the needs, evaluation of individual staff development

programs was also encouraged. Hoeltzel (1989) recommended ways of collecting data which included in-service activity evaluation forms, the Four-Year Program evaluation to measure the total impact of the program, analysis of student test scores, and observations of general school improvement. He also suggested this data could then be organized into useful information by answering the questions: Have the needs identified in the Staff Development Four-Year Plan been met? Do the licensed and certified participants rate the staff development program as having had a positive impact on instruction and school improvement?

New state legislation went into effect on July 1, 1999. This statute gave school districts the option to use state funds allocated to the school district for staff development to pay for or to reimburse teachers and support personnel for training in administration of first aid and techniques of cardiopulmonary resuscitation (Ruhman, 2002). An additional statute went into effect on November 1, 1999. This bill allowed a portion of the state funds appropriated for staff development to be used for workshops, seminars, guest lectures, and other methods that reflect the racial, religious, ethnic, and cultural diversity of the United States of America (Ruhman, 2002).

In 2001, the requirements for receiving accreditation by the State Board of Education again changed (Garrett, 2001). Each school district's board of education had to adopt a Comprehensive Local Education Plan every four years. This plan was required to include a school improvement plan; staff development plan; capital improvement plan; alternative education plan; and reading

sufficiency plan. Only school districts in which one or more school sites had been identified as low performing or high challenged were required to file this plan with the State Board of Education (Garrett, 2001). Each school district was required to review and update the plans annually and keep them on file in the local district.

In 1994, the "Goals 2000: Educate America Act" was intended to improve learning and teaching by providing a national framework for education reform; to promote the research, consensus building, and systemic changes needed to ensure equitable educational opportunities and high levels of educational achievement for all American students; and to promote the development and adoption of a voluntary national system of skill standards and certifications (Schugurensky, 2004). This bill included the following professional development goals:

1. All teachers would have access to pre-service teacher education and continuing professional development activities that would provide such teachers with the knowledge and skills needed to teach an increasingly diverse student population with a variety of educational, social, and health needs.
2. All teachers would have continuing opportunities to acquire additional knowledge and skills needed to teach challenging subject matter and to use emerging new methods, forms of assessment, and technologies.
3. States and school districts would create integrated strategies to attract, recruit, prepare, retrain, and support the continued professional development of teachers, administrators, and other educators, so that there is a highly talented work force of

professional educators to teach challenging subject matter.

4. Partnerships would be established, whenever possible, among local educational agencies, institutions of higher education, parents and local labor, businesses, and professional associations to provide and support programs for the professional development of educators.

Also in 1994, there were three models that shaped staff development programs (Sparks). The first was Results-Driven Education, which judged success by what students actually knew and could do as a result of their time in school instead of by the courses students took or the grades they received. It required teachers and administrators to alter their attitude to the belief that virtually all students can acquire the school's valued outcomes provided they are given sufficient time and appropriate instruction and required teachers to acquire new instructional knowledge and skills. The success of staff development programs was based on whether it altered instructional behavior in a way that benefited students. The second model was Systems Thinking. It recognized the complex, interdependent relationships among the various parts of the system, that the parts of a system formed something bigger and more complex than those individual parts when they come together. Systems thinkers were individuals who were able to see how the parts constantly influenced one another in ways which could support or hinder improvement efforts. Because educational leaders typically had not thought systemically, reform had been approached in a piecemeal fashion. The third model was Constructivism. Constructivists believed

that learners built knowledge structures rather than merely received them from teachers. Therefore, knowledge was not simply transmitted from teacher to student but instead constructed in the mind of the learner. Constructivists believed it was critical that teachers modeled appropriate behavior, guided student activities, and provided various forms of examples rather than use common instructional practices that emphasized telling and directing. Chart 1 describes how these three models shaped and transformed professional development programs.

Chart 1: Constructivists' Influence on Professional Development Programs

Non-Constructivist	**Constructivist**
Individual development	Organization development
Fragmented, piecemeal improvement efforts	Staff development driven by a clear, coherent strategic plan for the school district, each school, and for the departments that serve schools
District-focused	School-focused approached to staff development
A focus of adult needs	A focus on student needs and learning outcomes
Training that one attends away from the job as the primary delivery system for staff development	Multiple forms of job-embedded learning
An orientation toward the transmission of knowledge and skills to teachers by "experts"	The study by teachers of the teaching and learning processes
A focus on generic instructional skills	A combination of generic and content-specific skills
Staff developers who function primarily as trainers	Those who provide consultation, planning, and facilitation services, as well as training
Staff development provided by one or two departments	Staff development as a critical function and major responsibility performed by

	all administrators and teacher leaders
Teachers as the primary recipients of staff development	Continuous improvement in performance for everyone who affects student learning
Staff development as a 'frill' that can be cut during difficult financial times	Staff development as an essential and indispensable process without which schools cannot hope to prepare young people for citizenship and productive employment

From "A Paradigm Shift in Staff Development" by D. Sparks, 1994, *Journal of Staff Development*, 15(4).

The No Child Left Behind Act (NCLB) of 2002 reauthorized the Elementary and Secondary Education Act (ESEA) and incorporates the strategies and principles proposed by President Bush. NCLB was intended to increase accountability for states, school districts, and schools; greater choice for parents and students; more flexibility for states and local educational agencies in the use of Federal education money; and a stronger emphasis on reading (US Department of Education, 2002). The NCLB Act was intended to increase accountability by requiring states to implement statewide accountability systems covering all public schools and students. These systems were to be based on challenging state standards in reading and mathematics, annual testing for all students in third through eighth grades, and annual statewide progress objectives to ensure that all groups of students reach proficiency within 12 years. Assessment results and state progress objectives were to be broken down by poverty, race, ethnicity, disability, and limited English proficiency to ensure that no group was left behind. School districts and schools that failed to make adequate yearly progress (AYP) toward statewide proficiency goals would, over time, be subjected to

improvement, corrective action, and restructuring measures aimed at getting them back on course to meet state standards. Schools that met or exceed AYP objectives or closed achievement gaps were eligible for State Academic Achievement Awards.

The NCLB Act significantly increased the choices available to the parents of students who attended Title I schools that failed to meet state standards, beginning with the 2002-03 school year for students in schools that were previously identified for improvement or corrective action under the 1994 ESEA reauthorization. Local educational agencies had to give students attending schools identified for improvement, corrective action, or restructuring the opportunity to attend a better public school within the school district. The district had to provide transportation to the new school, and use at least 5% of its Title I funds for this purpose, if needed. For students who attended persistently failing schools (those that failed to meet state standards for at least 3 of the 4 preceding years), local educational agencies had to permit low-income students to use Title I funds to obtain supplemental educational services from the public- or private sector provider selected by the students and their parents. Providers had to meet state standards and offer services tailored to help participating students meet challenging state academic standards. To help ensure that local educational agencies offered meaningful choices, the new law required school districts to spend up to 20% of their Title I allocations to provide school choice and supplemental educational services to eligible students.

In addition, the NCLB Act provided more flexibility for states and local educational agencies in the use of Federal education money. Those provisions included the authority for states and local educational agencies to transfer up to 50% of the funding they received under four major state grant programs (Teacher Quality State Grants, Educational Technology, Innovative Programs, and Safe and Drug-Free Schools) to any one of the programs, or to Title I. The new law also included a competitive State Flexibility Demonstration Program that permitted up to seven states to consolidate their state's share of nearly all Federal State Grant Programs and provided additional flexibility in their use of Title V Innovation funds.

Another component of the No Child Left Behind Act stated President Bush's commitment to ensuring that every child could read by the end of third grade. To accomplish this goal, the Reading First initiative significantly increased the Federal investment in scientifically based reading instruction programs in the early grades. The Reading First State Grant program made six year grants to states, which made competitive sub-grants to local communities. Local recipients administered screening and diagnostic assessments to determine which students in grades K-3 were at risk of reading failure, and provided professional development for K-3 teachers in the essential components of reading instruction. The Reading First program also made competitive six year awards to local educational agencies to support early language, literacy, and pre-reading development of preschool-age children, particularly those from low-income families. Recipients used

instructional strategies and professional development drawn from scientifically based reading research to help young children attain the fundamental knowledge and skills they needed for optimal reading development in kindergarten and beyond.

The No Child Left Behind Act applied the principles of accountability, choice, and flexibility in its reauthorization of other major ESEA programs. For example, the law combined the Eisenhower Professional Development and Class Size Reduction programs into an Improving Teacher Quality State Grants program that focused on using practices grounded in scientifically based research to prepare, train, and recruit high-quality teachers. The program gave states and local educational agencies flexibility to select the strategies that best met their particular needs for improved teaching that helped them raise student achievement in the core academic subjects. In return for this flexibility, local educational agencies were required to demonstrate annual progress in ensuring that all teachers who were teaching in core academic subjects within the state be highly qualified.

Professional Development Today

There are many incentives to participate in staff development programs. One incentive is salary enhancement. In some states, eligibility to compete for merit pay or to climb a career ladder is often tied to "demonstrated commitment to personal and professional development" (meaning participation in staff development) (Stout, 1996). Another incentive is certificate maintenance. State

policy makers believe that periodic updating is desirable and that continuing in the occupation should be dependent on it. A third incentive is career mobility. Teachers take courses, obtain degrees, and participate in workshops to build resumes. Having done so, they have the opportunity to leave education for other occupations or to pursue other careers within education.

Professional development activities have been dominated by a training-based delivery system, generally managed by school districts. A study conducted by Little (1989) found that teachers were two to three times more likely to be participants in a district-provided staff development than enroll in a college or university course. The same study also calculated that the local district controlled more than four-fifths of state dollars for staff development. District-sponsored professional development typically consists of a variety of training options (workshops, special courses, or in-service days) designed to transmit a specific set of techniques, ideas, or materials to teachers (Little, 1993). For example, teachers may be asked to select a workshop from a list of options that includes training on the use of manipulatives, implementation of cooperative learning groups, or discipline techniques.

Richard DuFour, the recently retired superintendent of Adlai E. Stevenson High School in Illinois, believes most school districts could dramatically improve the quality of professional development with their existing resources if they were willing to stop some traditional practices (such as one-time workshops) and align the entire operation of the district with what virtually all schools proclaim is their

fundamental purpose--high levels of learning for all students (DuFour, 2003). DuFour (1995) began restructuring his school through collaboration in 1985. Traditionally, his school had assigned students to one of five academic ability levels—honors, accelerated, regular, modified, or basic. These placements were based upon a nationally normed test administered in the fall of the 8th grade. Hundreds of level changes were initiated each semester; however, 75% of them moved students to a lower academic level. DuFour's first step in restructuring his school was to assemble a task force made up of teachers, parents, community leaders, and students. He asked the group to describe the characteristics of an excellent high school. The task force developed a vision statement based upon these descriptions which called for the school's commitment to the success of each student. This was done through reducing the five ability levels to only three—an honors program, a regular level, and a basic level. The school also offered summer classes to help students acquire the prerequisite knowledge and skills needed to move up to the next level. The teachers continually sought new ways to be more effective and accepted their responsibility to help all students achieve success. Through professional development collaboration, they developed course outcomes, identified target levels of student proficiency, wrote course descriptions, and developed assessment instruments. They also assessed the results of student performance at the end of each semester and developed strategies to address areas where students had not met proficiency levels. The school restructured the two nine-week grading periods for each semester into

three six-week grading periods. Written progress reports were given out every three weeks so that parents could monitor the progress of their students and intervene if needed. In 1992, the school ranked first in the region academically. By 1994, it was among the top 20 schools in the world. In addition, 80% of the 1994 graduating class took an accelerated or Advanced Placement course sometime during their high school career. Stevenson became the first public high school in the county to receive the Excellence in Education Award from the United States Department of Education. DuFour (1995) found that in order for professional development programs to be successful, the design of the school system must change. Significant and sustained school improvement will not occur until faculty at the local school site combine their interest in school structure (rules, relationships, and procedures) with attention to school culture (the beliefs, assumptions, and norms that influence the operation of the school).

During a recent professional development seminar, Richard DuFour (Summer, 2004) asked the faculty to brainstorm ideas for improving student achievement. Their list included: smaller class sizes; more support staff to assist students (teacher aides, counselors, social workers, etc); fewer preparations for teachers; more supportive parents; the abolition of state testing; higher teacher salaries to attract people into the profession; more planning time for teachers; fewer initiatives from the central office; financial support for teachers to attend professional workshops or enroll in graduate courses; better academic preparation for students in the middle schools; better facilities; more access to technology for

staff and students; students with a stronger work ethic and reduced sense of entitlement; and more textbooks and instructional materials. DuFour acknowledged he could endorse most items on their list as things that would benefit them and their school. However, he asked that they also consider the following list of ideas for improving student achievement: academic goals for every student that were so clear, focused, and widely understood that students taking the same course from different teachers were ensured the opportunity to learn the same essential curriculum; close monitoring of each student's learning on a frequent and timely basis through the use of formative assessments that helped identify problem areas both for students in general and individual students; a systematic plan to give extra time and support to students experiencing initial difficulty in learning; strong parent partnerships with the school based on frequent twoway communication between the home and school; meaningful and timely information to every teacher clarifying how well his or her students had met school learning goals compared with colleagues' students; a collaborative culture in which teachers worked together in teams to analyze student achievement on common assessments, developed strategies to improve the current levels of achievement, and helped each other build on their strengths and address their weaknesses; a general assumption that it is the school's job to see to it that students learn rather than merely be taught, and the expectation that all students can and should learn at high levels; and a safe and orderly school environment with clear parameters for student behavior, consistent enforcement of those

parameters, and an overarching stipulation that members of the school community treat each other with mutual respect.

After comparing and contrasting the two lists, DuFour explained all of the ideas on the first list called for someone other than the staff to take the action necessary to improve the school. However, staff members themselves could initiate items on the second list. Teachers acknowledged that the factors on the second list did lie within their sphere of influence, while those on the first list did not. In addition, DuFour (1995) acknowledged that the items on the second list have a much more powerful impact on student achievement than those on the first. Studies over 35 years have confirmed that when schools create these conditions, they have a significant, positive effect on student learning (Georgiades, Fuentes, & Snyder, 1983; Lezotte, 1997; Marzano, 2003; Newmann & Associates, 1996; McLaughlin & Talbert, 2001).

DuFour (Summer, 2004) pointed out that educators must make a choice between two school improvement strategies. The first strategy focuses on others for school improvement. For example, if the school board would reduce class sizes, if the parents were more supportive, if the students were better prepared and more motivated we would see our school improve. The second strategy focuses on the conditions that lie within the teachers' sphere of influence. For example, teachers need to determine how they can monitor each student's learning on a timely basis, how they can respond with more time and support when a student struggles, and they can create time within the school day to work collaboratively.

DuFour believes we will see widespread school improvement once all schools buy into the second strategy.

The traditional perception that professional development is an occasional event that usually occurs off the school site is changing into the belief that the best professional development happens in the workplace rather than in a workshop (DuFour, Spring 2004). Teachers must continuously work together to improve their school instead of meeting only four or five days throughout the school year during professional development days (DuFour and Eaker, 1998). However, DuFour (Spring, 2004) points out that not all site-based professional development is effective. He developed the following questions for schools to use to identify their site-based staff development program as an enhancement of or hindrance to improving their students' learning: Does the professional development increase the staff's collective capacity to achieve the school's vision and goals? Does the school's approach to professional development challenge staff members to act in new ways? Does the school's approach to professional development focus on results rather than activities? Does the school's approach to professional development demonstrate a sustained commitment to achieving important goals?

In determining whether professional development efforts will have an impact on a school, it is the context (the procedures, programs, beliefs, expectations, and habits of the school) that plays the largest role (DuFour, 2001). Principals must recognize that providing teachers with ongoing support after the

initial training is critical to the success of any innovation. Therefore, an effective peer coaching program should be one of the first professional development initiatives that principals should provide for their schools. Principals can help instill this belief in his/her teachers through ongoing support. Principals must also provide the opportunity for teachers to work collaboratively to explore and implement the ideas and practices that are presented during professional development workshops (DuFour, 1998).

DuFour (Spring, 2004) offers several tips for leaders to improve their site-based professional development: You will never build a collaborative culture simply by inviting or encouraging staff to work together; Time for teachers to work together during the school day is essential; and The culture of the school should help teachers realize collaboration is mandatory. DuFour believes leaders must ensure that teams focus on learning by calling on them to respond to the following questions for every unit of instruction: What is it we want all students to know and be able to do as a result of this unit? How will we know when each student has demonstrated proficiency? What will we do to address the needs of students who initially have difficulty mastering the intended learning? DuFour believes if the team's work does not address these critical questions, there is little reason to anticipate the changes in practice that lead to improved results. Additional tips for leaders to improve their site-based professional development include: insist that every team establish norms to clarify their commitments for how they will work together; insist that every team develop and pursue a student

achievement goal that is measurable, attainable, results-oriented, time-bound, and aligned with school and/or district goals; provide every team with timely, user-friendly, relevant data and information that will allow its members to assess the impact of their various improvement strategies; monitor the teams' work by reviewing both the products they generate at each step of the process and the progress they make toward their student achievement goals; celebrate the teams' progress and be prepared to confront teams or individuals who are not honoring this collaborative approach to continuous improvement; and solicit feedback from teams about the resources and training they need to become more proficient in this collaborative process.

The current focus of professional development programs is to develop professional learning communities (DuFour, 2004). This movement is aligned with the 1957 National Society for the Study of Education recommendation that schools and entire staffs become collaborators in providing in-service education. Sykes (1996) points out that over 40 years later, "teachers are frequently the targets of reform, but they exert relatively little control over professional development" (p. 465). Professional Learning Communities can be made up of an entire school district, grade-level teaching team, a school committee, a high school department, a state department of education, or a national professional organization. DuFour (2004) believes this committee must focus on the following three “big ideas” that represent the core principles of professional learning communities:

1. Ensuring That Students Learn. The committee must address these questions:
   - What do we want each student to learn?
   - How will we know when each student has learned it?
   - How will we respond when a student experiences difficulty in learning? The answer to this question separates learning communities from traditional schools.
2. A Culture of Collaboration. This systematic process requires teachers to work together in order to analyze and improve their classroom practices. They engage in an ongoing cycle of questions that promote deep team learning. Schools must schedule time for teachers to collaborate. This process leads to higher levels of student achievement.
3. A Focus on Results. Working together to improve student achievement becomes the routine work of everyone in the school. Every teacher team participates in an ongoing process of identifying the current level of student achievement, establishing a goal to improve the current level, working together to achieve that goal, and providing periodic evidence of progress.

When developing common assessments for their courses and grade levels, teachers must decide what they want students to learn, what every student should know and be able to do as a result of each unit of instruction, and what knowledge

and skills students must demonstrate on the high stakes state and national assessments they must complete (DuFour, Winter 2002).

Research conducted by Louis, Kruse, and Raywid (1996) determined when teachers operate within the context of a learning community, they are more likely to develop professional competence. Principals play the critical role in constructing conditions that give rise to the growth of professional communities in schools. DuFour (2001) identified the following five steps principals must take in order to create a collaborative culture in their school:

1. Provide time for collaboration in the school day and school year.
2. Identify critical questions to guide the work of collaborative teams.
3. Ask teams to create products as a result of their collaboration.
4. Insist that teams identify and pursue specific student achievement goals.
5. Provide teams with relevant data and information.

DuFour (Winter, 2002) stated the most important area in which leaders can invest their time is to help collaborating teaching teams to focus on and become proficient in developing classroom assessments to be given to all students in the same grade level or course. DuFour believes teachers should work collaboratively to analyze state and local curriculum guidelines and recommendations of professional organizations for what all students should know and be able to do at the conclusion of a grade level or course, agree on the essential outcomes of each unit of instruction, develop common assessments to be administered to all students regardless of who is teaching the course, establish

proficiency standards—the performance level each student must reach to be deemed proficient in each intended outcome, administer the test to all students and review the results as well as identify and assist students who need additional opportunities to master the outcomes and discuss ideas to improve the collective level of achievement. When implementing professional learning community concepts, one of the greatest barriers to advancing on the continuum of change is a leader's tendency to delay or avoid action. DuFour (Winter, 2003) defines three qualifications often used to justify inaction:

1. The Need for Greater Buy-In. Some leaders believe they must have unanimous support for an improvement initiative before they take action to move forward. However, as long as all points of view have been heard, and the group's will is evident, those who are resistant to change must acknowledge that the group is ready to proceed. Leaders must press for action by clarifying the specific responsibilities each member of the staff must fulfill in the initiative, create procedures to monitor each person's attention to those responsibilities, celebrate evidence of commitment and improvement, and confront those who fail to contribute in a positive way. If leaders are unable to achieve a clear consensus, then they should pilot the initiative on a smaller scale with a willing group of participants.
2. More Training. Teachers need continuous training in writing curriculum, creating tests and rubrics, analyzing data, and developing goals. This

training must coincide while they are actively engaged with their team, they will learn by doing.

3. Stronger Relationships. In order to create effective teams, leaders must put staff in the position in which they must function as a team. When people are assigned to groups that must work interdependently to achieve a common goal, when they are provided time and support, when they have access to relevant feedback, when they face and overcome obstacles together, they become more proficient in working as a team.

Several researchers have conducted studies which concur with DuFour's studies, as well as his philosophies. Kanter (1983) found that even programs which are appropriately linked to the goals of the school will be ineffective if the training is not sound. Showers, Joyce, and Bennett (1987) concluded that all teachers are able to gain mastery of new skills and incorporate those skills in their teaching repertoire if their training provides: presentation of the theory supporting the innovation; demonstration; initial practice in the training session; prompt feedback regarding their efforts; and coaching (sustained practice with ongoing feedback and support) until the skill is mastered. They also found that research emphasizes that coaching is a prerequisite for the implementation of new skills or strategy (Showers, Joyce, & Bennett, 1987). According to Peterson (1994), an essential prerequisite for effective professional development is a sense of self-efficacy, the belief that we can shape our future through our own efforts.

Cost of Professional Development Programs

In light of recent budget cuts, the impact of professional development on student achievement and cost-effectiveness is being questioned. The concept that professional development outcomes can be reasonably linked to outcomes in student learning is a fundamental premise behind the accountability for such activities and processes (Guskey & Sparks, 1996; Ward, St. John & Laine, 1999). A historical review of the literature indicates that there has been considerable debate in the research community about the manner in which increased spending on education may or may not be related to improved performance (Ferguson & Ladd, 1996; Hanushek, 1989; Hedges, Laine & Greenwald, 1994; Biddle, 1997). An article on the subject of educational productivity (Hanushek, 1981) claimed that after reviewing 130 studies of educational productivity, no consistent, positive, significant relationships could be uncovered between increased spending on education and improved student achievement. Subsequent reviews by the same author (Hanushek, 1986, 1989, 1991) produced the same general result. However, a re-examination of Hanushek's analysis of the literature, conducted by Hedges, Laine & Greenwald (1994), arrived at a different conclusion. They determined that when alternative procedures for aggregating the results of separate studies are used, certain input measures—among them, factors related to teacher quality—do have a significant relationship to student outcomes.

These authors found that continued teacher education, ability, and experience are positively associated with student achievement. The difference in

results is due to the use of an alternative methodology for conducting the meta-analysis of the same literature (Plecki, 2000 Hedges, Laine & Greenwald (1994). Others who have reviewed prior production function research (Ferguson & Ladd, 1996) claim that many of the earlier analyses did not critically sort out the methodologically weak studies from consideration, thus casting doubt on the validity of the conclusions being drawn. One study conducted to determine the link between student academic achievement and teacher classroom practices, obtained in part through participation in professional development seminars, was conducted by Wenglinsky in 2002. He concluded professional development influences teachers' classroom practices strongly. Furthermore, the more professional development teachers received in hands-on learning, and indeed the more professional development they received regardless of topic, the more likely they are to engage in hands-on learning activities. In addition, the more professional development teachers received in working with special student populations, the less likely they were to engage in lower-order activities.

Understandably, administrators and policymakers want to ensure the money invested in professional development opportunities result in either school improvement or individual development on the part of the teacher or students. Policymakers bear a responsibility for the equitable and productive management of resources as they address questions of how to best support the improvement of the quality of teaching and learning. Difficult choices must be made regarding the distribution and use of a constrained set of resources targeted at improving teacher

quality (Plecki, 2000). Scholars have increasingly noted the need to have professional development practices more crucially linked to the improvement of student performance (Darling- Hammond & McLaughlin, 1995). Policymakers presume that the resources they allocate purchase learning opportunities, offer incentives, and underwrite activities that—over time—develop the capabilities of teachers. These capabilities are further assumed to be the most immediate "cause" of student learning. Across the span of a teacher's career, these accumulating capabilities are likely to be associated with evidence of improved student performance (Plecki, 2000).

Some efforts have been made to calculate the costs of resources currently being devoted to the continuing education of teachers. Miller, Lord & Dorney's (1994) estimates range between 1.8% and 2.8% of the district's operating budget. The cost per regular classroom teacher ranged between $1,755 and $3,259. Their study was based on a series of intensive case studies in four districts located in different regions in the U.S., ranging in size from 9,500 to 125,000 students. The estimates are based on direct costs such as the salaries of district and school administrators, and substitute teachers as well as the direct costs of materials and supplies. One study of professional development in California (Little et al., 1987) estimated the investment in professional development to be almost 2% of total funding for education in that state. In a study of one New York school district, Elmore (1997) estimated that spending on professional development amounted to about 3% of the total budget.

One long-standing observation has been that school districts with more than 1% of its budget allocated to professional development is an exception (Darling-Hammond, 1994; Houston & Freiberg, 1979). These studies do not consider, however, that most districts, somewhat due to the requirements of the bargained contracts with teachers, compensate teachers for professional development activities through an increase in salary, thus representing a "hidden" cost of traditionally delivered professional development. For example, a study of spending on professional development in the Los Angeles Unified School District (Ross, 1994) found that the district paid $1,153 million in teacher salaries in 1991-92, and that 22% of this figure could be attributed to salary point credits that were earned because of courses or other approved professional development activities on the part of teachers.

Professional development activities are usually financed through a combination of revenue sources, including non-governmental sources, thereby complicating the cost. Professional development experiences also might be associated with substantial contributions of volunteer time on the part of teachers (Little et al., 1987). At the same time, teachers might accrue additional credits for professional development activities which advance them on the salary schedule, resulting in a long-term fiscal obligation to the district in the form of the base salary increase. Additionally, similar professional development activities might vary significantly in costs per teacher depending on the financing strategy employed. For example, one strategy for supporting teacher professional

development is the "early release" option in which students are released from school on a regular basis, thereby allowing time during regular school hours for teachers to engage in professional development. This option is increasing in popularity because it is less costly for school districts since it removes the additional costs of substitutes or hours worked by teachers. However, students receive reduced instructional time.

Evaluating Professional Development Programs

Evaluation models from Guskey, Sparks, National Staff Development Council (NSDC), North Central Association Commission, Massachusetts Department of Education, and Joellen Killion will be described. Professional Development has usually consisted of teachers sitting passively while a self-proclaimed expert introduced them to new ideas or trained them in new practices. The success of this session was usually judged by a happiness quotient that measured participants' satisfaction with the experience and their assessment regarding its usefulness in their work (Sparks, 1983).

Within the past decade, educational literature continues to indicate that professional development has serious flaws that result in ineffective results and a lack of impact on teacher knowledge and skills (Corcoran, 1995; French, 1997; Goldenberg & Gallimore, 1991: Guskey, 2000; Hilliard, 1997; Hirsh & Ponder, 1991; Lambert, 1989; Sparks, 1997; Sykes, 1996; and Watson, 1994). Some researchers believe that the problems with professional development are related to the structure of traditional professional development programs (Hilliard, 1997;

Korinek, et al., 1985). Traditional forms of professional development are considered ineffective because of insufficient time and continuity, lack of focus on practitioners' immediate needs, isolation from the classroom, and a poor connection to the reform agenda (Corcoran, 1995; French, 1997; Richardson, Anders, Tidwell, & Lloyd, 1991; Showers, 1990; and Smylie, 1989). These substantial weaknesses result in a failure to impact teacher practice. Corcoran (1995) contends there is no current consensus in the education field about best practices in professional development and consequently a large number of school districts are continuing to do what they have always done.

There have been many attempts to evaluate professional development programs. However, as noted earlier, one cannot get ironclad proof as to whether or not professional development improves student performance (Guskey, 2000). Guskey contends the evidence about whether or not professional development is contributing to specific gains in student learning is what most people want anyway.

Guskey (2000) believes professional development is a process that is intentional, ongoing, and systemic. He states that interest in evaluating professional development has grown tremendously in recent years for four important reasons: Educators have gained a better understanding of the dynamic nature of professional development; Professional development today is increasingly recognized as an intentional process; The need for better information to guide reforms in professional development specifically and educational

programs generally; and Increased pressure at all levels of education for greater accountability.

Along with Dennis Sparks, Thomas Guskey developed a model in 1996 outlining the major components in the relationship between professional development and improvements in student learning. The model is based on the premise that the quality of professional development is influenced by a variety of factors. Those factors include:

1. Content Characteristics—refer to the "what" of professional development. They pertain to the new knowledge, skills, and understandings that are the foundation of professional development programs. Content may include a deeper understanding of particular academic disciplines, specific pedagogical processes, or new role expectations and responsibilities. Aspects relating to the magnitude, scope, credibility, and practicality of the change required to implement the new knowledge and skill are also included in content characteristics.
2. Process Variables—refer to the "how" of professional development. They pertain not only to the type and forms of professional development activities, but also the way those activities are planned, organized, carried out, and followed up. The quality of initial training or learning procedures, and the value of sustained follow-up activities such as action research, coaching, or focused study groups are also included in this category.

3. Context Characteristics—refer to the "who", "when", "where", and "why" of professional development. They involve the organization, system, or culture in which professional development takes place and where the new understandings will be implemented.

These three factors form the conceptual framework of the Standards for Staff Development (National Staff Development Council). Guskey (2000) believes that neglecting any one of these three factors can significantly diminish the effectiveness of professional development and drastically reduce the likelihood of improvement in student learning.

The central component of the Guskey and Sparks (1996) model is Quality of Professional Development. It is a necessary prerequisite to student achievement because of its direct effect on teacher and administrator knowledge and practices. The primary factor influencing the relationship between professional development and improvements in student learning is teacher knowledge and practices. Guskey (2000) stated, "If professional development does not alter teachers' professional knowledge or the classroom practices they employ, little improvement in student learning can be expected" (p.75). He also believes that in assessing implementation of a program, the dimensions of quantity and quality are equally important. A good idea implemented poorly seldom brings positive results. Guskey (2000) points out that administrator knowledge and practices are also directly influenced by the quality of professional development. However, they are not included in professional development evaluations because

administrators do not directly influence student learning. He does acknowledge that administrators influence student learning indirectly through their interactions with teachers and through their leadership roles in helping to form school policies regarding school organization, the curriculum, assessments, and so on. Parent knowledge and practices are included in the model as the third primary influence on improvements in student learning. Parents have a direct effect on student learning through the learning experiences they provide for their children during early years of development, as well as through their involvement in school activities and homework assignments. Student learning outcomes are another central component in the model. They are defined to include the entire range of student learning goals such as assessment results, portfolio evaluations, marks or grades, and scores from standardized examinations.

Three important implications stem from this model: the relationship between professional development and improvement in student learning is not random or chaotic, it offers guidance to those involved in evaluating professional development programs and activities, and it illustrates the importance of a systemic approach to professional development and the need to view reform from a systems perspective. Guskey (2000) states,

> Educational improvement efforts that do not take into consideration the complex nature of the relationship between professional development and improvement in student learning, or the various factors that impinge on the relationship, are unlikely to succeed. Improvements may be evidenced in

> some classrooms or in some schools, but it seldom brings improved success at high levels of learning for all students. (p.77)

He believes teachers, administrators, and parents all have critical roles to play in the improvement of student learning, and their ability to fulfill their responsibilities more effectively will be determined by the quality of professional development. This model clarifies those relationships in a way that can assist school leaders in planning, implementing, and evaluating those professional development efforts.

Guskey (2000) defines three major types of evaluation: planning, formative, and summative. Planning evaluation takes place before a program actually begins. It is designed to give those involved in professional development and implementation a precise understanding of what is to be accomplished, what procedures will be used, and how success will be determined. Formative evaluation occurs during the operation of a program. Its purpose is to provide those responsible for the program with ongoing information about whether things are going as planned and whether expected progress is being made. This information can be used to guide necessary improvements. Summative evaluation is conducted at the completion of a program. Its purpose is to provide program developers and decision makers with judgments about the program's overall merit or worth. It describes what was accomplished, the consequences (positive and negative), the final results (intended and unintended), and in some cases, whether the benefits justify the costs.

Guskey (2000) believes that meaningful and effective evaluations of professional development require more detail than the preceding three types of evaluation can provide. Therefore, he added five critical levels of information to his model. These levels are hierarchically arranged from simple to more complex. Each higher level builds on the levels that come before. Therefore, success at one level is necessary for success at the levels that follow. The first level of professional development evaluation is the most common form of evaluation—participants' reactions to the experience. It is the simplest level and the one in which educators have the most experience. It is also the easiest type of information to gather and analyze. Experienced professional developers know the importance of attending to basic human needs. Information is generally gathered through questionnaires handed out at the end of a session. Further information can be gathered through focus groups, interviews, and personal learning logs.

Level Two focuses on measuring the knowledge, skills, and attitudes that participants gained. Specific criteria and indicators of successful learning must be outlined prior to the beginning of the professional development experience. Evaluation can involve a pencil and paper assessment, participants' demonstration of the desired skill, oral or written personal reflections, examination of the participants' portfolios, or analyses of case studies. Analysis of this information provides a basis for improving the content, format, and organization of the program.

Level Three focuses on organization support and change. Information is gathered through questionnaires, focus groups, district and school records, minutes from follow-up meetings, interviews, and participant portfolios. Gathering this information is more complicated than at previous levels due to the analysis of district and school records and examination of the minutes from follow-up meetings. This information is used to document and improve organizational support as well as to inform future change initiatives.

Level Four focuses on whether participants are using their new knowledge and skills on the job. The central question is "Did what participants learn make a difference in their professional practice?" Information is gathered through questionnaires, structured interviews with participants and their supervisors, participant oral and written reflections, participant portfolios, direct observations, and video or audiotapes. Information at this level cannot be gathered at the completion of the professional development session. Measures of use must be made after sufficient time has passed to allow participants to adapt the new ideas and practices to their setting. Analysis of this information provides evidence on current levels of use and can help restructure future programs and activities to facilitate better and more consistent implementation.

Level Five focuses on the impact of the professional development program on student learning. Information is gathered through questionnaires, student records, school records, participant portfolios, and structured interviews with students, parents, teachers, and administrators. The information is used to inform

improvements in all aspects of professional development, including program and activity design, implementation, and follow-up. In some cases, the information is used to estimate the cost-effectiveness of professional development.

These models were not Guskey's only attempts to evaluate professional development programs. In 1995, Guskey and Roy published the following guidelines:

- Evaluation should be ongoing.
- Evaluation expectations and procedures should be explicit and public.
- Evaluation should be informed by multiple sources of data.
- Evaluation should use both quantitative and qualitative data.
- Evaluation should focus on all levels of the organization.
- Evaluation should be considerate of participants' time and energy.
- Evaluation results should be presented in forms that can be understood by all program participants and patrons.

Also in 1995, the National Staff Development Council (NSDC), a non-profit professional association devoted to professional development and school improvement, created a set of standards and guidelines for professional development that schools and districts could use to evaluate professional development. The NSDC recommended that school systems:

- Set clear and high standards for the learning of all students and then focus on the changes in practice required to achieve student-learning goals.
- Hold superintendents and principals, as well as teachers, accountable for student achievement and the provision of high-quality professional development in their annual performance reviews.
- Invest in teacher learning, ideally allocating at least 10% of their budgets to professional development.
- Review school improvement plans to ascertain that they focus on student learning and specify effective methods for reaching these goals.
- Involve all teachers in the continuous, intellectually rigorous study of the content they teach and the ways they teach it.
- Embed opportunities for professional learning and collaborating with colleagues in the daily schedule of teachers. NSDC advocates that at least 25% of teachers' time be devoted to their own learning. Schools should schedule more time for collaborating with colleagues.
- Provide teachers with classroom assessment and other action research skills that allow them to determine on a regular basis if student learning has been improved because of their new knowledge and skills.
- Recognize the importance of skillful leaders in schools and at the district level who have a deep understanding of instruction, curriculum, assessment, and the organizational factors that affect student learning.

In addition, the NSDC developed a self-assessment for schools to use in order to determine their current state of implementation of their professional development programs. The standards are based on NSDC's view that the primary purpose of professional development is to ensure high levels of learning for all students through improved professional learning experiences for every school employee who affects student learning. The standards fall into three categories: context, process, and content. Context standards describe where the learning will be applied—the organizational environment in which improved performance is expected. Process standards refer to how the learning occurs. Content standards refer to what is learned. The assessment utilizes individual, group, and schoolwide scores. It can be used to reveal strengths as well as areas for improvement. It is given in two parts. The first part consists of individuals completing the assessment, then forming small groups in order to compare their scores and discussing similarities and differences. Participants give each question a score of 1-5. A score of 1 represents Strongly Disagree, 2—Disagree, 3—Somewhat Agree, 4—Agree, and 5—Strongly Agree.

In 1998, Guskey devised additional guidelines to evaluate professional development programs:

1. **Clarify the intended goals.** Make sure the professional development goals are clear, especially in terms of the results you hope to attain with students and the classroom or school practices you believe will lead to those results. Change

experts refer to this as 'beginning with the end in mind.' It is also the premise of a 'results-driven' approach to professional development (Sparks, 1997).

2. **Assess the value of the goals.** Take steps to ensure the goals are sufficiently challenging, worthwhile, and considered important by all those involved in the professional development process. Broad-based involvement at this stage contributes greatly to a sense of shared purpose and mutual understanding. Guskey believes clarifying the relationship between established goals and the school's mission is a good place to begin.
3. **Analyze the context.** Identify the critical elements of the context where change is to be implemented and assess how these might influence implementation. Such an analysis might include examining pertinent baseline information on students' and teachers' needs, their unique characteristics and background experiences, available resources, parent involvement and support, and organizational climate.
4. **Estimate the program's potential to meet the goals.** Explore the research base of the program or activity, and the validity of the evidence supporting its implementation in contexts similar to yours. When exploring the literature on a

particular program, be sure to distinguish facts from persuasively argued opinions. A thorough analysis of the costs of implementation—and what other services or activities must be sacrificed to meet those costs—should be included as well.

5. **Determine how the goals can be assessed.** Decide up-front what evidence you would trust. Ensure that evidence is appropriate, relevant to the various stakeholders, and meets at least minimal requirements for reliability and validity. Multiple indicators will probably be necessary in order to identify both intended and possible unintended consequences.
6. **Outline strategies for gathering evidence.** Determine how evidence will be gathered, who will gather it, and when it should be collected. Be mindful of the critical importance of intermediate or benchmark indicators that might be used to identify problems (formative) or forecast final results (summative). Select procedures that are thorough and systematic, but considerate of participants' time and energy. Thoughtful evaluations typically use a combination of quantitative and qualitative methods, based on the nature of the evidence sought. To document improvements, you must also plan meaningful contrasts using appropriate comparison

groups, pre- and post-measures, or longitudinal time-series measures.

7. **Gather and analyze evidence on participants' reactions.** At the completion of both structured and informal professional development activities, collect information on how participants regard the experience. A combination of items or methods is usually required to assess perceptions of various aspects of the experience. In addition, keeping the information anonymous generally guarantees more honest responses.
8. **Gather and analyze evidence on participants' learning.** Develop specific indicators of successful learning, select or construct instruments or situations in which that learning can be demonstrated, and collect the information through appropriate methods. The methods used will depend on the nature of the learning sought. In most cases, a combination of methods or procedures will be required.
9. **Gather and analyze evidence on organizational support and change.** Determine the organizational characteristics and attributes necessary for success, and what evidence best illustrates those characteristics. Then collect and analyze that information to document and improve organizational support.

10. **Gather and analyze evidence on participants' use of new knowledge and skills.** Develop specific indicators of both the degree and quality of implementation. Then determine the best methods to collect this information, when it should be collected, and how it can be used to offer participants constructive feedback to guide (formative) or judge (summative) their implementation efforts. If there is concern with the magnitude of change, pre- and post-measures may need to be planned. The methods used to gather this evidence will depend on the specific characteristics of the change being implemented.

11. **Gather and analyze evidence on student learning outcomes.** Considering the procedures outlined in Step 6, collect the student information that most directly relates to the program or activity's goals. Be sure to include multiple indicators to tap the broad range of intended and possible unintended outcomes in the cognitive, affective, and psychomotor areas. Anecdotes and testimonials should be included to add richness and provide special insights. Analyses should be based on standards of desired levels of performance over all measures and should include contrasts with appropriate comparison groups, pre- and post-measures,

or longitudinal time-series measures.

12. **Prepare and present evaluation reports.** Develop reports that are clear, meaningful, and comprehensible to those who will use the evaluation results. Present the results in a form that can be understood by decision makers, stakeholders, program developers, and participants. Evaluation reports should be brief but thorough, and should offer practical recommendations for revision, modification, or further implementation. In some cases, reports will include information comparing costs to benefits, or the 'return on investment'. (p. 41-43).

In 2000, the North Central Association Commission on Accreditation and School Improvement developed a rubric for schools to use when evaluating their professional development programs. Five points is awarded for the successful implementation for each of the following criteria:

A. Data have been collected and analyzed to determine what professional staff needs to know and be able to do to implement the school improvement plan.
B. A staff development plan has been created that will enable the faculty to implement the goals, interventions, and activities of the school improvement plan.
C. Staff development plan is results-based.
D. The staff development plan provides activities for various levels of faculty knowledge and skills.

E. The staff development plan provides assistance for professional faculty experiencing difficulties implementing the school improvement plan.

F. The staff development plan includes an evaluation of its success as documented by improvement in student performance.

The purpose of this rubric was to enable educators to identify areas in which their professional development programs needed improvement.

In 2001, the Massachusetts Department of Education adopted the following checklist to evaluate its professional development programs.

Does the program:

1. Reflect the common core of learning and the curriculum frameworks?
2. Incorporate discipline-specific and interdisciplinary approaches?
3. Promote developmentally appropriate strategies that meet the diverse needs of student learners?
4. Incorporate technologies for instruction and classroom management?
5. Include follow-up that focuses on the application to improve student learning?
6. Incorporate an ongoing evaluation process that uses multiple sources including changes in classroom/leadership practices and student learning?
7. Provide opportunities to learn from peers: mentoring, guided practice, or study groups?
8. Support a degree of experimentation and risk taking?

9. Encourage collegiality and collaboration across and within professional roles?
10. Provide equitable access of opportunities for practicing, sharing, and disseminating successful practices on-the-job?
11. Provide supportive environments for educators to acquire and experiment with new learning?
12. Involve participants in design, implementation, and evaluation?
13. Reflect high quality professional development plans for districts and schools that are aligned with school, district, individual educator, and state goals?
14. Is the program supported through district budget at a significant level?

Joellen Killion (2002) developed eight steps to evaluate a professional development program. These steps were categorized into three phases: planning, conducting, and reporting. The planning phase consisted of assessing the evaluability of the program, determining whether the program was ready to be evaluated, and formulating the evaluation questions. The conducting phase consisted of collecting, organizing, and data, and interpreting the data. The reporting phase included disseminating the findings and evaluating the evaluation.

Summary

Many factors have influenced professional development programs over the last century. Consequently, there is a greater recognition of the importance of professional development as a critical component of current efforts to reform

education. However, if professional development does not alter teacher knowledge or practice, then little improvement in student learning can be expected and reform initiatives cannot be realized.

There is increasing interest in evaluating professional development which should be considered a systematic effort to bring about change and improvement. Two of the most significant and immediate outcomes of professional development are teacher knowledge and practice. These two outcomes are the primary factors affecting the relationship between professional development and improvements in student learning (Guskey & Sparks, 1996). Education has not done a good job at documenting success of professional development programs and the critical role they played in those improvements (Todnem & Warner, 1994). Professional development should not be judged primarily by how participants perceive the value of the training, but whether it changes the instructional behavior of teachers in ways that improve student learning (Sparks & Hirsh, 1997). Change in teacher practice and the consequent impact on student learning are rarely considered when evaluating the effects of professional development (Guskey, 1994: Guskey & Sparks, 1991; Todnem & Warner, 1994; Sparks & Hirsh, 1997). The measurement of professional development outcomes can no longer suffice at happiness quotients or numbers in attendance. The ultimate measure of professional development must be made by documenting improvements in teaching and learning.

Well-designed professional development programs incorporate theory, observation, demonstration, practice, coaching, feedback, and reflection components (Corcoran, 1995; Hillard, 1997; Loucks-Horsley, Harding, Arbuckle, Murray, Dubea, & Williams, 1987; Sykes, 1996; Watson, 1994). Teacher change requires learning opportunities that support a deep examination of educational practice, while attending to the beliefs and attitudes held by teachers (Richardson, 1994; Tatto, 1998). If change is to be endured and sustained, teachers need feedback on the results of their efforts to change. New practices will be accepted and retained once they are perceived as effective (Guskey, 1994). Therefore, continued follow up and support to professional development is critical. To fully examine the effects of professional development, efforts must include measures of: teacher reactions; teacher learning; the use of new knowledge and skills; affective change; and evidence of improvements in student learning (Guskey, 2000). This research attempts to clarify the relationship between professional development and its effects on classroom teachers at the district level.

Chapter II reviews the literature in the area of professional development as it relates to the purpose of this study. Chapter III describes the research context, procedures/data collection, and data analysis techniques.

CHAPTER III RESEARCH METHODOLOGY

Introduction

The purpose of this study is to investigate the effects of professional development on classroom teachers at the school district level. Two research questions are addressed:

1. How effective are professional development programs (Differentiation, Tribes Training, and Dr. Lee Jenkins Model) in a suburban/metropolitan school district?
2. What impact do these three professional development programs have on student academic achievement in this school district?

This is a Mixed Methods Explanatory Design where quantitative data was gathered to identify how the three professional development groups compare on the variable of the effectiveness of the training as revealed in the t-tests. The follow up qualitative interviews were the means for explaining the results found in the t-tests.

Research Context

The superintendent of Daisy Public Schools agreed to allow the primary researcher to conduct survey and interview research in his ten schools. The school district is made up of a blend of 9,353 suburban/metropolitan students and encompasses 38 square miles. The high school contains 1,981 students in grades 10-12. An alternative center houses 103 students in grades 9-12. Freshman Academy contains 748 ninth grade students. The middle school houses 1,409

students in grades seven and eight. There are two intermediate schools, one containing 958 students and the other containing 476 students all in grades five and six. There are three elementary schools in the Daisy School District with a combined enrollment of 3,503 students in grades pre-kindergarten through fourth. A pre-kindergarten school educates an additional 175 students.

The Daisy Public School District spends the majority of its professional development money each year to train teachers in three specific programs: Differentiation, Dr. Lee Jenkins Model, and Tribes Training. Their goal is for all teachers to incorporate these programs into their daily teaching and for the programs to increase student academic achievement.

The Differentiation model is defined as anticipating the differences that exist between and among children and planning instruction to meet those needs. During this Professional Development training, teachers are taught how to differentiate and individualize assignments based upon student readiness, interest, and learning styles. Strategies used to differentiate instruction may include tiered activities, flexible groups, independent studies, multiple texts, alternative assignments, literature circles, homework options, various computer programs, learning contracts, and centers. It is assumed that students benefit from differentiation as their readiness, interest, and learning styles are met with engaging tasks. Teachers are involved in this training for six 1.5 hour workshops and two 6-hour workshops for a total of 21 hours of training which is conducted by Daisy's Director of Curriculum and Instruction throughout the school year.

The second model, Dr. Lee Jenkins Model, involved several key elements (Jenkins, 2003). The first is alignment of expectations grade-to-grade, elementary to middle to high school. Next, expecting that both high standards and high success rates are possible at the same time. Thirdly, leadership for learning (meeting the needs common to all students) comes first, then management of learning (differentiation, disaggregation). The fourth key element is that data must provide the view through the windshield, not the rear-view mirror. Teachers must use data to drive their instruction. The fifth key element assumes that most educational problems (over 95%) are caused by the system and educators have the power to fix most of these systemic issues. For example, students have permission to forget most of what is taught (cramming—which begins with spelling words on Thursday nights in first grade).

The final key element to the Dr. Lee Jenkins Model is the three basic, powerful graphs that provide guidance for decision making by students, teachers, and administrators. These graphs are the individual student run chart, the class run chart, and the scattergram. These charts are devised from quizzes administered to students weekly. The quizzes review and preview the essential elements in each subject area, thereby not allowing students to cram for the quiz and forget the material the next day. Dr. Jenkins believes the quizzes are important because they increase student's retention of the essential elements and schools are evaluated on student's long-term memory, but students are often evaluated on their short-term memory.

The individual student run chart documents the student's progress, the class run chart documents the classroom score each week, and the scattergram documents individual student progress compared to his/her classmates. Dr. Jenkins conducts the training at Daisy Public Schools. He shows the participants how to use the three graphs to track and analyze data for student improvement. This training program requires 20 hours of 1-hour sessions, which are conducted throughout the school year. The final professional development model used at Daisy Public Schools is Tribes Training. This program is designed to help the classroom teacher create a culture that maximizes learning and human development. It teaches the teacher how to create a safe and caring atmosphere in the classroom where children feel appreciated and capable. Once the students are able to work together, the teacher creates a student-centered classroom through active learning, cooperative groups, and through strategies that involve all learners—including all ability levels and learning styles. This training program is conducted for three consecutive weeks throughout the summer. Teachers must attend all three weeks of training.

Procedures/Data Collection

Approval for the use of human subjects in a research project was obtained through the university. Access to the participants and permission for the research study was secured through the superintendent of Daisy Public Schools. This school district contains 9,563 students, employs 651 certified teachers, encompasses 38 square miles, and is made up of the several campuses (see

Appendix B). A cover letter written and signed by the superintendent explaining the purpose of the study, its significance, importance of response, and assurance of confidentiality (See Appendix A) and survey instrument (See Appendix C) was distributed to the 83 classroom teachers who had participated in the most recent professional development program in the areas of Differentiation, Dr. Lee Jenkins Training, and Tribes Training. Data was obtained from the 47 classroom teachers who completed and returned the survey to the primary researcher in sealed envelopes. Seven surveys from each sub group were chosen at random and interviews (See Appendix D) were conducted with those teachers. The superintendent of Daisy Public Schools was also interviewed (see Appendix E).

Data Analysis

Research results will show the correlation between the three professional development programs and teacher level of expertise both before and after receiving the professional development training. The interval between the pre- and post-test was eight months. The study method will include coding the qualitative data and using SPSS Statistical Analysis Software to conduct a t-test with three dependent samples (Differentiation vs. Dr. Lee Jenkins Model, Differentiation vs. Tribes Training, and Dr. Lee Jenkins Model vs. Tribes Training) along with an ANOVA to determine differences among the three groups on the posttest.

CHAPTER IV: RESULTS AND ANALYSIS

The survey instrument (See Appendix C) was distributed to the 83 classroom teachers who had participated in the most recent of the three professional development programs. All respondents were asked to return the survey in the envelopes provided. Of the 23 surveys distributed to the Differentiation participants, 15 were completed and returned for a response rate of 65.2%. Twelve of the 24 surveys were completed and returned by the Tribes Training participants for a response rate of 50%. Of the 36 participants in the Dr. Lee Jenkins training, 20 completed and returned their survey for a response rate of 55.6%. Therefore, data was obtained from the 47 classroom teachers who completed and returned the survey. Seven surveys from each sub group (Differentiation, Tribes Training, and Dr. Lee Jenkins Model) were chosen at random and interviews (See Appendix D) were conducted with those teachers.

Demographic Data of Sample

N=47	N	Percent of Sample
Gender		
Male	8	17%
Female	39	83%
Age Range		
20-29	4	8.5%
30-39	14	29.8%
40-49	19	40.4%
50-59	10	21.3%
60+	0	0%
Highest Degree Held		
Bachelor's	20	42%
Master's	27	58%
Number of Years Teaching		

1-5	7	14.9%
6-10	9	19.1%
11-20	12	25.6%
21-30	17	36.1%
31+	2	4.2%
Grade Level Currently Teaching		
1st-4th	16	34%
5th or 6th (Intermediate School)	9	19.2%
7th or 8th (Middle School)	10	21.3%
Freshman Academy	4	8.5%
10th -12th	8	17%

The sample consisted of 47 teachers who voluntarily completed the professional development survey. The sample was predominantly female (83%) with 39 participants, and 8 male participants representing 17% of the sample. Their age range was between 20 and 59 years. The majority of the sample, 40.4%, was between the ages of 40 and 49, 29.8% were between the ages of 30-39, 21.3% were ages 50-59, 8.5% between the ages of 20-29, and no participants were over 60 years old. Educational degrees held by the participants included Bachelor's and Master's. The majority of the teachers have Master's degrees (58%), while 42% hold Bachelor's degrees. Years of experience ranged from 1 to over 31 years. Thirty-six percent of the teachers have had between 21 and 30 years of experience, with 25.6% of the sample having 11 to 20 years of experience. The sample was also comprised of teachers having 6-10 years of experience (19.1%), 1-5 years of experience (14.9%), while 4.2% have over 31 years of experience. Participants were currently teaching in grades one through twelve, with the majority (34%) teaching in grades 1-4. Twenty-one percent were

teaching at the middle school level, 19.2% at the intermediate level, 17% at the high school, and 8.5% at the freshman academy.

Survey Results

Respondents:
Differentiation N=16
Tribes Training N=12
Dr. Lee Jenkins Model N=19

Question	Yes	No
1. Do you regularly use this staff development program in your classroom?		
Differentiation	100%	0%
Tribes Training	83.3%	16.6%
Dr. Lee Jenkins Model	79.0%	21.0%
2. Do you have a support network where you meet regularly with other staff development participants to ensure the program is continuously effective in the classroom?		
Differentiation	56.3%	43.7%
Tribes Training	41.7%	58.3%
Dr. Lee Jenkins Model	15.8%	84.2%
3. Do you perceive the staff development to have been beneficial?		
Differentiation	81.2%	18.8%
Tribes Training	83.3%	16.7%
Dr. Lee Jenkins Model	94.7%	5.3%

Differentiation participants' answers ranged from daily use of Differentiation to using the program about once a week. One participant stated she adapted the program to fit her young students' needs. Another participant stated Differentiation is not a program to her, she considers it a way of thinking

about instruction using best practice models from multiple intelligence to cooperative learning. The nine respondents who stated they did have a support network reported they met weekly or monthly. An intermediate teacher stated she didn't have a regularly scheduled meeting, but there are teachers she can call upon for assistance when needed. An elementary respondent stated, "In the past, our school would have been able to provide substitutes for a few hours to allow a group of teachers to plan and implement new Differentiation techniques. However, due to budget cuts, that is no longer an option." An elementary teacher described Differentiation training as extremely beneficial, while her colleague described it as only so-so. A high school teacher commented that she has seen an increased interest in her students since she has implemented the Differentiation strategies.

Tribes Training participants' answers ranged from using the Tribes principles several times a day to not using the principles at all. A middle school teacher who has over 120 students stated she used the Tribes principles in every class. In contrast, a self-contained elementary teacher with 23 students stated she didn't have enough time to fit in a Tribes principle everyday. An elementary teacher declared her school did meet regularly, but the meetings were discontinued due to lack of teacher interest. Another elementary teacher stated she could go to the counselor or another teacher when she needed input or suggestions. Therefore, she felt a regularly scheduled meeting was not necessary. An elementary teacher commented that the program contained excellent ideas for

cooperative learning and motivation. However, an intermediate teacher felt the staff development program was only somewhat beneficial—classroom time restrictions would prohibit the full implementation of the program in her five classrooms.

Dr. Lee Jenkins participants' answers ranged from using the Dr. Lee Jenkins Model for several subject areas (middle school teacher) to not using the method in any subject area. A high school teacher stated he was using the model, but not inputting students quiz scores into the software on a routine basis. In response to having a support network, participant answers ranged from talking about the Dr. Lee Jenkins Model once during a math meeting to discussing successes/failures informally several times a week as the need arose. The overwhelming majority of participants used the words very, extremely, or absolutely when describing their perception of the training having been beneficial. The middle school teacher who said it was not beneficial commented that the weekly quizzes associated with this program would rob the students of valuable instruction time.

Survey Question 4

Using the continuum below, place an "X" where you felt your skills were at the beginning of this professional development opportunity and place an "O" where you felt your skills were at the end of the training.

Novice(1)	Practitioner(3)	Expert(5)
Novice	I feel unsure; I'm just beginning.	
Practitioner	I am somewhat comfortable.	

Expert I feel very skilled and comfortable.

SPSS Statistical Analysis Software was used to conduct a dependent samples t-test to determine whether the self-reported level of expertise after the training was significantly different from the self-reported level of expertise before the training.

t-tests for Significant Differences

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
PRE	47	0	4	1.21	.778	.606
POST	47	1	5	3.43	.773	.598
GAIN	47	0	4	2.23	.865	.748
POSTLJ	20	1	4	2.95	.605	.366
PRELJ	20	0	3	.90	.641	.411
GAINLJ	20	0	3	2.10	.912	.832
POSTT	12	3	4	3.50	.522	.273
PRET	12	1	3	1.25	.622	.386
GAINT	12	1	3	2.25	.754	.568
Valid N (listwise)	12					

Frequencies

Statistics

		PRE	POST
N	Valid	47	47
	Missing	0	0

Frequency Table

PRE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	8.5	8.5	8.5
	1	34	72.3	72.3	80.9
	2	5	10.6	10.6	91.5
	3	3	6.4	6.4	97.9
	4	1	2.1	2.1	100.0
	Total	47	100.0	100.0	

The majority of participants in all three programs (72.3%) felt their skills were at the novice level before receiving training.

POST

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	2.1	2.1	2.1
	2	1	2.1	2.1	4.3
	3	26	55.3	55.3	59.6
	4	15	31.9	31.9	91.5
	5	4	8.5	8.5	100.0
	Total	47	100.0	100.0	

After receiving training, the majority of participants (55.3%) felt their skills were at the practitioner level.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PRE * PROGRAM	47	100.0%	0	.0%	47	100.0%
POST * PROGRAM	47	100.0%	0	.0%	47	100.0%

PRE * PROGRAM Crosstabulation

Count

		PROGRAM						Total	
		D		LJ		T			
PRE	0			4	20%			4	8.5%
	1	9	60%	15	75%	10	83.3%	34	72.3%
	2	4	26.6%			1	8.3%	5	10.6%
	3	1	6.6%	1	5%	1	8.3%	3	6.4%
	4	1	6.6%					1	2%
Total			15		20		12		47

The majority of participants in all three programs felt their skills were at the novice level at the beginning of the training.

POST * PROGRAM Crosstabulation

Count

		PROGRAM						Total	
		D		LJ		T			
POST	1			1	5%			1	2.1%
	2			1	5%			1	2.1%
	3	4	26.6%	16	80%	6	50%	26	55.3%
	4	7	46.6%	2	10%	6	50%	15	31.9%
	5	4	26.6%					4	8.5%
Total			15		20		12		47

The majority of participants in the Dr. Lee Jenkins training felt their skills were at the practitioner level at the completion of the training. All Tribes Training participants felt they were either at or beyond the practitioner level, and the majority of Differentiation participants felt their skills were between the practitioner and expert levels at the completion of the training.

Differentiation:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	POSTD	4.00	15	.756	.195
	PRED	1.60	15	.910	.235

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	POSTD & PRED	15	.415	.124

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
POSTD - PRED	2.40	.910	.235	1.90	2.90	10.212	14	.000

The 2.40 difference in the mean score is a substantial gain between teachers' perceptions of where their skills were at the beginning of the Differentiation Training compared to the end of the training. The statistically significant t statistic (t=10.212) indicates teacher's perceptions were significantly higher after the training.

Tribes Training:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	POSTT	3.50	12	.522	.151
	PRET	1.25	12	.622	.179

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	POSTT & PRET	12	.140	.664

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 POSTT - PRET	2.25	.754	.218	1.77	2.73	10.340	11	.000

The 2.25 difference in the mean score is a considerable gain between teachers' perceptions of where their skills were at the beginning of the Tribes Training compared to the end of the training. The statistically significant t statistic (t=10.340) indicates teacher's perceptions were significantly higher after the training.

Dr. Lee Jenkins Method:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	POSTLJ	2.95	20	.605	.135
	PRELJ	.90	20	.641	.143

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	POSTLJ & PRELJ	20	-.014	.955

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1 POSTLJ - PRE	2.05	.887	.198	1.63	2.47	10.335	19	.000

The 2.05 difference in the mean score is a sizeable gain between teachers' perceptions of where their skills were at the beginning of the Dr. Lee Jenkins Training compared to the end of the training. The statistically significant t statistic (t=10.335) indicates teacher's perceptions were significantly higher after the training.

ANOVA

GAIN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.776	2	.388	.507	.606
Within Groups	33.650	44	.765		
Total	34.426	46			

An ANOVA was used to determine whether there was a statistically significant difference in self-reporting expertise across the three training programs. There were no statistically significant differences (F=.507) across the three programs. All three made gains, but one group did not make a significantly higher gain than another group.

Question	**Yes**	**No**
5. Does this staff development program give you the opportunity		

to learn additional skills and strategies to do your job?		
Differentiation	100%	0%
Tribes Training	91.2%	8.3%
Dr. Lee Jenkins Model	84.2%	15.8%

An elementary teacher commented that since Differentiation contained eight training sessions, teachers had collaboration opportunities with colleagues whom they typically only saw twice a year. Another elementary teacher agreed she learned additional skills and strategies during the staff development program. However, she stated she had a problem with the delivery of this program, "We have different learning styles too. Don't put me in a lecture about Differentiation—teach by modeling!"

The elementary teacher who said Tribes Training did not give her the opportunity to learn additional skills and strategies to do her job explained the time frame of the training was inadequate. She stated she would have liked for the training to take place throughout the school year so that teachers could discuss program implementation successes and challenges as they arose.

A middle school teacher who stated he did not learn additional skills and strategies to do his job through the Dr. Lee Jenkins training stated,

> This program cannot be implemented in my classroom because I do not have the instructional time to devote to it. Furthermore, I want to see data that proves this program is successful in helping students retain essential elements of the curriculum before I jump off the deep end with it.

In response to survey question number six (What recommendation can you make to help you use this program?) participants in both Differentiation and Tribes Training recommended continuing the training in order to build consistency between teachers and offering collaboration time. Other participants in the Differentiation program recommended:

Intermediate Teacher: "In the beginning, more clarification on terminology used throughout the lessons."

Elementary Teacher: "Remember you don't have to use everything (it can get overwhelming) just take in pieces."

Elementary Teacher: "Shorter time commitment."

Elementary Teacher: "Ongoing teacher collaboration to exchange and share ideas."

Elementary Teacher: "Sample lesson plans."

Intermediate Teacher: "The presentation was way too much theory and presented over many of our heads. We needed actual application."

Intermediate Teacher: "We need to continue professional development opportunities and have principals continue to expect us to use it. They need to hold us accountable for our differentiation lessons."

Elementary Teacher: "Concentrate on applying differentiation to one area such as math—and gradually build"

Additional recommendations from the Tribes Training participants' included:

Elementary Teacher: "I would like a list of games and ideas on a flip book or easily accessible."

Intermediate Teacher: "The training was long which may hinder some teachers from participating. There was not much time between sessions to practice and develop questions."

The majority of Dr. Lee Jenkins participants' responses contained the recommendations: developing a support network, follow-up sessions at local sites, and more assistance available for constructing graphs and charts. An additional recommendation from a middle school teacher: "Allow professional development to be a professional choice."

Question	**Yes**	**No**
7. Would you recommend that the district continue offering staff development in this area? Why or why not?		
Differentiation	100%	0%
Tribes Training	100%	0%
Dr. Lee Jenkins Model	94.7%	5.3%

The majority of respondents stated training in Differentiation needed to continue because it helped them adjust their lessons to meet the needs of all learners. An intermediate teacher stated, "This training helped me focus on the importance of differentiating for the various levels of academic performance I work with at one time." A high school teacher added, "It provides more tools to address individual differences to teach key concepts." Most Tribes Training participants stated training needed to continue because it taught them new, fun,

and effective ideas for cooperative learning, classroom management, and class community. Additional comments included: "I would use Tribes more if the majority of the teachers were using it also." from an intermediate teacher. An elementary teacher stated, "We need regular encouragement and continual training to be able to incorporate this philosophy. If we don't get it, it will not work. Teachers will stop using it completely." Several participants in the Dr. Lee Jenkins Model responded that training should continue because it ensured students didn't forget the essential elements of each subject, it allowed students to see their progress on the charts and celebrate their attainment of their goals, it encourages new ways of assessment, problem solving, motivational techniques, and it allows for both student and teacher self-assessment. The middle school teacher who did not recommend that the district continue offering staff development in the Dr. Lee Jenkins model stated, "I don't believe in the numbers game to evaluate student progress."

Survey question eight (What evidence do you have that would tell you this staff development opportunity has helped students to improve their achievement?) provoked an array of answers. Several Differentiation participants cited improved test scores, student motivation, class work, and attitudes as evidence of improved student achievement after incorporating Differentiation activities in their classrooms. An elementary teacher stated her lower level students understood key concepts more readily.

The majority of Tribes Training participants cited increased student motivation and fewer discipline problems, which they felt increased instruction time. Most of the Dr. Lee Jenkins participants cited concrete evidence of increased student academic achievement through individual student run charts and class run charts and through a comparison of pre- and post-test assessments. Many respondents commented on this model's premise of not allowing students to forget essential elements of each subject since students are quizzed throughout the year and cannot simply memorize material for the test.

Interview Results

Seven participants from each professional development program were drawn at random and interviews (See Appendix D) were conducted with those teachers.

N=21 Percent of Sample

Question	
1. How many years have you been teaching?	
1-5	28.6%
6-10	23.8%
11-20	38%
21-30	9.5%
31+	0%
2. How many years have you taught in the Daisy School District?	
1-5	38%
6-10	19%
11-20	38%
21-30	4.8%
31+	0%
3. Which grade level are	

you currently teaching?	
1st-4th	38.1%
5th or 6th	19%
7th or 8th	23.8%
Freshman Academy	4.8%
10th-12th	14.3%

All 21 participants stated they were using the program in which they were trained in their classroom (interview question number four). Each Differentiation participant cited helping them meet the needs of all learners as their reason for using the program. An elementary teacher stated,

> I am using techniques I learned during Differentiation training to plan specific lessons that meet the needs of all my learners. I have students in my class who are gifted, Title I, LD, and three who have severe learning disabilities—one of which has been diagnosed with Down Syndrome. The training helped me to understand how to meet the needs of all my students even though they have a wide span of abilities.

Another elementary teacher stated, "Differentiating lessons provides variety and makes learning more fun!" A middle school teacher confessed, "I am only using parts of Tribes training, especially in dealing with behavior issues. I honestly feel there is so much to get in during the day, and taking time to do Tribes activities takes away from academics." Each Tribes Training participant commented on the community building aspect of the program. An elementary teacher stated, "My shy and hesitant children feel included and safe." Another elementary teacher commented, "Tribes activities help children take ownership and solve their

problems." The seven Dr. Lee Jenkins Program participants stated they were using the program in their classrooms because it would be a district requirement the following year. Two participants simply stated it was going to be a requirement and said nothing more. Three participants stated they were in favor of the program. The intermediate teacher stated, "My students love seeing their results posted as a class and they love keeping track of their own results." A middle school teacher stated,

> I believe this program helps students retain concepts they have previously learned. I also believe it's a good way to give them a glimpse of what's to come in a manner that allows them to more easily comprehend the concepts when they are formally introduced in the future.

An elementary teacher stated, "It's a good way to help assess my students in an ongoing manner and give them immediate feedback. I am hoping to break the cramming habit that students fall into before it begins." Two participants were not in favor of implementing the program into their curriculum. An elementary teacher stated,

> If this program were not required by the district beginning next year, I would not be using it. My students become extremely frustrated when they cannot work a problem that we have not been over. It is also difficult for my kids to understand the procedure because they have difficulty listening and following directions. I spend a great deal of my planning period returning phone calls to parents who don't understand why their

child scored poorly on the quizzes. They constantly tell me I am destroying their child's self-confidence by testing him over material he has not been introduced to.

Another elementary school teacher stated,

> I feel that the Dr. Lee Jenkins Program doesn't have enough studies to back up its program. I think it should be an option that teachers can choose to implement in their classroom, like Tribes Training and Differentiation—it shouldn't be mandatory next year.

In interview question five (Was the staff development training sufficient to incorporate this program into your curriculum?) all seven participants using Differentiation techniques stated the training was sufficient for them to incorporate the strategies into their curriculum. Each participant also stated the opportunity to collaborate with colleagues and discuss teaching strategies was an important component of the training. Each teacher was excited to try the different strategies in his/her classroom and looked forward to sharing their experiences during the next training session. One intermediate teacher confided,

> In the beginning, the training made me feel inferior because I wasn't differentiating assignments. I then felt overwhelmed because I worried how I would incorporate all the strategies into my classroom. I'm more comfortable now, because I've experimented enough to know which strategies work best for my students—and I don't worry about the rest.

Six of the participants stated the training sessions were sufficient to incorporate Tribes into their curriculum. However, an elementary teacher stated she would have liked to have a follow-up session. The elementary teacher who stated the training sessions were not sufficient stated, "To incorporate this program into a kindergarten or first grade classroom isn't easy. Some of the activities aren't appropriate for this age level and we weren't shown different ways to incorporate it." Four of the seven participants stated the training they received was sufficient to incorporate the Dr. Lee Jenkins program into their curriculum, with the remaining three participants stating it was not sufficient. The freshman academy teacher stated, "I have found the immediate feedback of the quizzes very valuable for both my students and myself. I am able to assess my students' knowledge and adjust to their needs." The intermediate teacher stated, "The training was a good start, but I've had to ask fellow teachers for clarification at times." An elementary teacher stated,

> I felt like there were gaps that still have not been filled for me with regard to my grade level. I can see the program being beneficial for upper grade levels, but I still can't see its application to my own.

Six of the seven Differentiation participants stated they did not have a support network which met regularly to ensure the program is effective in the classroom (interview question number 6). A middle school teacher stated, "A support network would be very helpful. It would also act as an accountability group." The intermediate school participant who stated she did have a support

network stated, "We have a monthly meeting to learn about a new strategy. We recently had one on learning contracts. Our principal sets up these meetings, and she has teachers from our site share how they are using the strategy." The high school teacher stated,

> I don't have a support network because I don't know of many high school teachers who are actually differentiating assignments. They want all of their students to be exposed to the same level of material. They believe their students will be at a disadvantage if they attend college—where assignments are never differentiated. Students at the high school age level often have the mind set that they want to do as little work as possible—they wouldn't welcome a challenge or enrichment activity. In addition, teachers find it difficult to justify such assignments to parents, who sometimes accuse us of picking on their child when we provide their child with such an activity.

All seven Tribes Training participants stated there was no support network at their schools. An elementary teacher stated, "The woman who conducted our training has met with us twice this year. However, next year we will be on our own with no formal support." Another elementary teacher stated, "It is impossible for us to meet because of conflicts in schedules and different building locations on our campus." The seven Dr. Lee Jenkins participants responded they did not have a support network either. Several participants stated they asked a colleague if they needed help. Not all participants thought a support group was a good idea. A

high school teacher stated, “I hope someone doesn’t go and start up a support group either, I don’t have time for it.”

Three of the seven participants cited support from administrators as a recommendation to help them use Differentiation in the classroom (interview question number 7). An elementary teacher stated, “Administrators need to take something off our plates if they want all teachers to have the time to differentiate assignments.” The intermediate teacher stated, “Principals must make it clear to teachers that they are looking for differentiated assignments when they observe teachers. They should also ask teachers to share good examples of Differentiation in action during staff meetings.” The middle school teacher stated, “Administrators need to give us release time so we can collaborate with teachers at other sites in order for the program’s implementation to be consistent across the district.” Other recommendations included follow up meetings after the training sessions have been completed and allowing teachers to observe in classrooms in which differentiated strategies are being used. All seven Tribes Training respondents cited collaboration with other teachers as a tool to help them use Tribes Training. An elementary teacher suggested allowing teachers from different school sites to collaborate in order to implement the program more consistently across the district. An intermediate teacher recommended the district have more teachers attend Tribes training. She explained she felt the program was losing its momentum due to lack of teacher interest and increased district expectations in academic areas. Recommendations from the Dr. Lee Jenkins

Model ranged from simple to complex. A middle school teacher stated, "It would really be helpful if the software portion of the program could be saved on our computer desktop for easy access of inputting quiz scores." The intermediate teacher stated,

> It is a simple program that is very effective if it is practiced consistently. I have noticed that some teachers get hung up on some of the details of what Dr. Jenkins believes. However, if teachers would take the time to see the big picture and understand the benefits, they would be more likely to embrace the program.

An elementary teacher stated, "If this is such a wonderful teaching tool, then someone can sit down with me and show me how I can implement this into my curriculum without taking away from other district requirements." Another elementary teacher stated,

> The mandatory implementation factor of this program for next year needs to be removed. I appreciate the opportunity to hear and learn about new programs. However, I feel that my professional judgment is taken away when I am told I must implement this program. Administrators want to ensure all teachers are doing the same thing. They aren't taking into account what is best for the students. Teachers become rebellious to their efforts and no longer adjust or modify instruction to meet all learners' needs, they just simply do what they are told. Administrators need to trust teachers more and regulate them less.

All seven Differentiation participants recommended the district continue training teachers in Differentiation (interview question number eight). They each cited the need to use Differentiation strategies to meet the needs of all their students. An elementary teacher stated, "Differentiating lessons is very helpful to many students and requires the teacher to have a greater depth of understanding of each subject's curriculum." The intermediate teacher stated,

> I get very frustrated when my high school aged child comes home with assignments that he does not need to be doing. He has mastered the skill. Every year he has had at least one class where the teacher was lacking in the ability to differentiate.

Six Tribes Training participants said they would recommend continuing the training throughout the district. An elementary teacher stated, "I have seen the positive outcomes of this program!" An intermediate stated, "With all the drill and practice we're asked to do now, the change of pace is definitely what the children need. If staff development is not offered, then some will think it is OK to stop implementation." The middle school participant who did not believe this training should continue commented,

> Some of the activities aren't appropriate for the grade level in which I teach. Furthermore, time constraints prevent me from fully implementing the program into my classroom. The district just keeps adding to our curriculum without taking anything off our plates.

Five participants from the Dr. Lee Jenkins Model declared they were in favor of the district continuing to offer staff development for this program. The sixth participant stated staff development in this program should continue, but only on one condition. The elementary teacher stated, "Training in this program should continue only if implementing the program into your classroom is an option instead of being required. If not, then drop the whole program." The final participant stated she was not in favor of staff development in this program continuing. The elementary teacher stated, "Training should not continue because there isn't enough research to back up this program. Is Dr. Jenkins using us as guinea pigs to prove or disprove his methods?"

Six participants cited students' excitement and attitude toward schoolwork as evidence of improved classroom achievement (interview question number 9). The seventh participant, the intermediate teacher, cited improved scores on posttests as evidence of improved student achievement after Differentiating lessons. All seven participants stated they had no concrete evidence of Tribes Training improving student achievement. However, each participant cited improved social skills among their students. An elementary teacher stated:

> I feel like some of the students who hang back at the beginning of the year had an easier time joining in, which gave me an opportunity to move on to other things quicker than I have in the past.

Another elementary teacher commented on increased peer coaching and better attitudes among her students. A third elementary teacher stated, "My students

work better with each other and have more respect for each other. I have very few discipline problems in class. When kids feel better about themselves, they tend to try harder." Six participants in the Dr. Lee Jenkins Model cited the required class run and student run charts as evidence of improved student academic achievement. A high school teacher stated, "The class run chart enables students to compare their individual score to the average score and know where they stand in relation to their peers. The charting has given me a better knowledge of their learning as well." An intermediate participant stated, "I feel my students have retained concepts better and also have a quicker understanding of new concepts when they are formally introduced (at least the ones that they have previewed as a result of the quizzes." The seventh participant, an elementary teacher, stated:

> I have implemented the math quizzes and I input students' quiz scores weekly. However, I cannot say that just by doing the quizzes and graphing it has improved learning or student achievement. I do not think or have evidence to show that their learning is any different than if I did not do the quizzes or graphing.

Five teachers had participated in both Dr. Lee Jenkins Model and Tribes Training (interview question number ten). The remaining two teachers had attended Dr. Lee Jenkins training. Five teachers stated the Dr. Lee Jenkins Model was the easiest to use because it is a ready made program. An elementary teacher explained,

> The Dr. Jenkins Model is cut and dried. The quizzes are all prepared for you. Tribes and Differentiation take so much time for me to prepare—and I can't use the same projects and ideas next year because the make-up of my classroom will change.

One elementary teacher felt Tribes Training was the easiest to implement stating, "Tribes Training is the easiest of the three because it just comes natural for me. I've always centered my classroom around improving each student's self-esteem and making him/her feel accepted and comfortable." The remaining teacher stated, "I can't really say Differentiation is the easiest to implement, but I think it is the most important because it challenges each child to reach his or her highest potential." All seven Tribes Training participants had received training in the Dr. Lee Jenkins Model, but only three had participated in Differentiation Training. Four teachers stated the Dr. Lee Jenkins Model was easiest to implement in their classroom, each citing the lack of teacher preparation required as the reason. A middle school teacher confided his hesitancy in implementing Tribes Training in his classroom. He stated, "With our success being gauged by our test scores, it's impossible to justify taking time to do Tribes activities instead of having students actively engaged in academics." The remaining three teachers (all elementary teachers) cited Tribes as easiest to implement. One teacher stated, "After you have set up the Tribes foundation in your classroom, students respect each other and behavior problems become nearly non-existent—leaving more time for me to teach instead of police." Three participants in the Dr. Lee Jenkins Model had

participated in both Tribes Training and Differentiation. Two teachers had attended Tribes Training only. One teacher had attended Differentiation Training only, and the remaining teacher had yet to attend training in either area (however, she was enrolled in future sessions of both programs). Five teachers declared the Dr. Lee Jenkins Method as easiest to implement, once again citing the program was complete. A middle school teacher explained, "The quizzes have already been developed using the essential elements of the subject. I simply administer the quizzes, record the scores on the software, and track the progress of individual students and the class as a whole." The remaining two teachers declared Differentiation was the easiest for them to implement. An elementary teacher stated, "I was using Differentiation in my classroom before I attended the training and just didn't know what it was called. Aren't all teachers differentiating assignments?"

Principle Findings

Differentiation was the only program all respondents were regularly using in their classroom in spite of almost half of the participants not having a support network. Ten of the twelve Tribes Training participants stated they were using the program regularly in their classroom even though less than half did not have a support network. While fifteen of the nineteen participants stated they were using the Dr. Lee Jenkins Model regularly in their classroom despite only three participants having access to a support network. All participants of the Differentiation training stated it gave them the opportunity to learn additional

skills and strategies to do their job and recommended the district continue offering this program. All but one of the Tribes Training participants stated the training gave them the opportunity to learn additional skills and strategies to do their job; however, all participants recommended the district continue offering this program. Three of the Dr. Lee Jenkins participants did not believe the training gave them the opportunity to learn additional skills and strategies to do their job, but only one did not believe the district should continue offering this program.

The only program in which participants could produce concrete evidence of increased student academic achievement was the Dr. Lee Jenkins Model. Participants had pre- and post-test assessments in which the growth could be observed. They also had both student run charts and class run charts that showed increased academic achievement of individual students as well as the class as a whole. Differentiation participants also cited improved test scores, but could not produce pre- and post-test comparison results.

The data obtained in this study identified weaknesses that may hinder the successful implementation of the three programs. Less than half of the participants stated they had a support network to ensure the program was continuously effective in their classroom. Many teachers commented on the lack of collaboration time with colleagues to discuss successes/failures during implementation. Several participants also commented on the lack of support from administrators, ranging from non-reduction of instructional obligations to give them more time to devote to the implementation of the new program to

administrators not holding them accountable to ensure the new program has been implemented in their classroom.

The superintendent of Daisy Public Schools was interviewed (see Appendix E) to determine his perceived success of the three primary professional development programs and to obtain his thoughts about professional development in general. The questions and answers are as follows:

1. What is your philosophy on professional development?

   Professional Development has several essential and critical components:

   1. A focus on student academic growth
   2. A focus on student affective growth such as character development, teaming (which could also be considered an academic area), social development, and psychological development.
   3. A focus on teacher growth. Both the pedagogy and the affective domain.

2. What do you hope each staff development program will do for the school system?

   My primary desire with Differentiation is that it will eliminate or come as close to eliminating as possible, drop-outs. The reason that would happen is if Differentiation is fully implemented across grades and throughout our school district, theoretically and ideally, every students' needs would be met. An ancillary desire is improved academics on the part of those children who can improve their

academics. A third desire or goal is improved academic test scores.

My primary goal for Dr. Lee Jenkins Model is to improve student academic performance through understanding that they are growing academically each year. Historically, students receive very little data about their own personal growth. There are not regular examples of data based feedback. With Dr. Jenkins L to J Model, there is regular feedback, it is data based, and we will discover whether or not that generation improved academically. [The L to J Model refers to the pattern of the pre- and post- test configurations.]

My hope for Tribes Training is not dissimilar to Differentiation—for the drop-out rate to be minimized and hopefully eliminated. Tribes Training is both social and psychological training that provides students with tools that they can use both individually and in groups that will minimize classroom issues, maximize a student's potential for interacting well with others, and will therefore hopefully maximize student's learning. The key issue for me is each student can live better with him or herself and be a more successful and productive citizen in our school society.

3. How do you see these programs fitting into your philosophy?

"All three programs contain the essential and critical components I talked about earlier."

4. Where do you visualize each program at this point in time?

I can't put an exact percentage on it, but Differentiation fully implemented would currently be in far fewer than half of our classrooms. My grandson used to use the statement "It still has knee socks on" meaning it's still a baby. At this point, Differentiation is still a baby. I am hoping it will grow as teachers work with their fellow teachers and help it to grow.

The Jenkins Model has been implemented in all mathematics classrooms and a smatter few of other classrooms/subjects where teachers have chosen to implement it. It has been implemented in probably a third of our classrooms district wide. That should jump fairly dramatically next year with the implementation of L to J in Language Arts classrooms. In a year from now, I anticipate it to be implemented in over half, in the 60-70% range.

Tribes training at the high school level is pretty much non-existent. But, interestingly enough, at the Alternative Center it is well received. However, I can't validate that—I haven't talked to the Alternative Center staff, I've just heard that from teachers who have been in and out of my office. At the middle school, implementation would be sporadic. At the elementary level, it is used pretty much across the district. I have observed Tribes Training at all sites. However, I can't honestly say I've seen it being used routinely in every elementary classroom. But I do see it being used enough that I know it is

implemented fairly broadly at the elementary and intermediate sites.

5. Do you regularly meet with principals to reinforce the importance of using these programs?

> We do not regularly meet to discuss the importance of using Tribes strategies. However, we do regularly meet and discuss Differentiation and L to J. Tribes is probably a little less emphasized because it was introduced several years ago and we went through the training process and we expected it to spread, but we can not keep hammering all teachers with all programs. Teachers in the district are somewhat like a balloon, if you fill it too full, it will burst.

6. Do principals regularly meet with their teachers to reinforce the importance of using these programs in the classroom?

> "Not to my knowledge. That training is done predominantly through the district office."

The superintendent feels these three programs, if implemented successfully in each classroom, can eliminate the drop-out rate. He believes the use of the programs will improve students' academic growth as well as character, social, and psychological development. He also believes teaching practices will be improved as teachers receive training in the programs. He regularly meets with principals to discuss the importance of the implementation of Differentiation and the Dr. Lee Jenkins Method, but does not discuss Tribes Training—he understands the importance of not overwhelming his teachers.

Summary

In this chapter, data collected from the professional development survey and interview sessions was presented. The final chapter will offer a summary of the major findings of this research with discussion, recommendations, and conclusions.

CHAPTER V: DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

Discussion

Program Effectiveness. With regards to the effectiveness of the training in the three professional development programs in the Daisy Public School District (question 1), the study results show the training was sufficient in all three programs because the majority of participants utilized the program in their classroom. One hundred percent of the Differentiation participants were using the program, while 83.3% of Tribes Training, and 79% of Dr. Lee Jenkins participants were using the program. The t-tests revealed the same ranking order. The difference in the mean score (teachers' perceptions of where their skills were at the beginning of the training compared to the end of the training) for the Differentiation Program was 2.40. The difference in the mean score for Tribes Training was 2.25, and 2.05 for participants in the Dr. Lee Jenkins Model—again ranking the success of the training as Differentiation first, Tribes Training second, and Dr. Lee Jenkins Model third. As previously stated, a limitation of this study is that it contained only one Likert Scale question on which a dependent samples t-test could be conducted.

The significance level of .606 indicates there are no statistically significant differences among the three groups of participants' responses after the training was completed. All participants in each group made gains, but one group did not make a significantly higher gain than another group. When asked if the program

in which they were trained gave them the opportunity to learn additional skills and strategies to do their job, the same ranking order continued: Differentiation (100%), Tribes Training (91.2%), and Dr. Lee Jenkins Model (84.2%). In addition, 100% of the Differentiation participants stated their training was sufficient to incorporate the program into their classrooms, while 85.7% of Tribes Training and 57% of Dr. Lee Jenkins participants deemed their training sufficient.

To further solidify this ranking order, 100% of participants in both the Differentiation and Tribes Training programs recommended that the district continue offering training in these areas, while only 94.7% of Dr. Lee Jenkins participants felt training in this program should continue. The middle school teacher who did not recommend that the district continue offering training in the Dr. Lee Jenkins model stated, "I don't believe in the numbers game to evaluate student progress." Participants in all three programs suggested collaboration time to help them use the program in their classrooms. Fullan (1995) found that by not offering teachers a support network to ensure the implementation of the program, some teachers perceive the training as a separate entity from their classroom. In the same study, Fullan also found that by treating professional development as a single entity separated from daily work of classroom teachers it significantly limits its effectiveness. In addition, DuFour and Eaker (1998) discovered that teachers must continuously work together to improve their school instead of meeting only four or five days throughout the school year during professional development days.

One survey question contradicted the ranking order of the three programs' success. Participants in the Dr. Lee Jenkins Model felt that their training was the most beneficial (94.7%), while only 81.2% of Differentiation and 83.3% of Tribes Training participants felt their training was beneficial. So how can 94.7% of the Dr. Lee Jenkins participants declare their training beneficial, but only 57% categorize the same training as sufficient? When asked about this discrepancy, interview participants stated they felt the training was beneficial because: 1) They perceived its implementation to be extremely easy; 2) The pre- and post-test as well as all of the quizzes had already been developed for them. However, when it came time to input the scores into the software, they realized the technical training was insufficient.

How can 100% of the Differentiation participants categorize the training as sufficient, but only 81.2% of the participants catagorize the same training as beneficial? Most participants rationalized that they agreed with the Differentiation philosophy (assignments should be tailored to each student's ability level), but participants felt overwhelmed with the task of modifying assignments for lower achieving students and creating challenging and enriching assignments for more advanced students. They felt several hours of the training should have been devoted to allowing teachers to create differentiated lessons, a much more beneficial activity than listening to the lecturer justify the Differentiation philosophy.

The responses from Tribes Training participants regarding the training as beneficial (83.3%) and sufficient (85.7%) were more consistent. An intermediate teacher felt the program would be only somewhat beneficial in her classroom, time restrictions would prohibit the full implementation of the program in her five classrooms. An elementary teacher stated the training was not sufficient because the recommended activities were not appropriate for her first grade students.

Student Achievement. When it comes to the impact the three programs had on student academic achievement (question 2), the majority of teachers perceived Differentiation to again be the clear winner. In fact, the general consensus was that Differentiation would be beneficial for all grade levels since each student would be working at his/her own pace. An exception was a high school teacher who pointed out that it was difficult for her to justify modifying assignments unless a student had been identified as a special needs student because the teacher was required to give the student a grade based upon the course content. The majority of participants felt Tribes Training would be most appropriate for elementary, intermediate, and middle school students. Participants felt that by the time students reached freshman academy, they were more focused on academics and had worked out their juvenile problems, which participants associated with what Tribes Training was hoping to alleviate. Most of the participants felt the Dr. Lee Jenkins program would be most appropriate for intermediate, middle school, freshman academy, and high school students. They rationalized that students of those ages would understand the student and class run charts that reflect their

personal achievement growth and the achievement of the entire class. An elementary teacher explained, "The Dr. Lee Jenkins Program wouldn't fall by the wayside as [the] other two programs can because teachers and administrators will be required to run reports weekly beginning next year."

Even though the majority of teachers perceived Differentiation to have the greatest impact on student academic achievement, the only program in which participants could produce concrete evidence of increased student academic achievement was the Dr. Lee Jenkins Model. Participants had pre- and post-test assessments in which the growth could be observed. Since teachers input student's weekly quiz scores into the software, they also had both student run charts and class run charts that showed increased academic achievement of individual students as well as the class as a whole. In order to identify subgroups for remedial instruction and further increase student academic achievement, administrators had access to this software and were able to disaggregate the scores based upon gender, ethnicity, economically disadvantaged, and primary language spoken. A high school teacher stated, "The class run chart enables students to compare their individual score to the average score and know where they stand in relation to their peers. The charting has given me a better knowledge of their learning as well." An intermediate participant stated, "I feel my students have retained concepts better and also have a quicker understanding of new concepts when they are formally introduced—at least the ones that they have previewed as a result of the quizzes."

Six of the seven Differentiation participants cited students' excitement and attitude toward schoolwork as evidence of improved academic achievement, but they had no concrete evidence to back up their claim. The seventh participant, an intermediate teacher, cited improved scores on posttests as evidence of improved student achievement after Differentiating lessons. However, she had no evidence that the improved test scores were a direct result of differentiating lessons. According to Fullan (1992) one would have to eliminate all other factors that could have caused the change.

All seven Tribes Training participants stated they had no concrete evidence of improved student achievement. However, each participant cited improved social skills among their students, which could lead to improved academic achievement. An elementary teacher stated, "I feel like some of the students who hang back at the beginning of the year had an easier time joining in, which gave me an opportunity to move on to other things quicker than I have in the past." Another elementary teacher commented on increased peer coaching and better attitudes among her students. A third elementary teacher commented, "My students work better with each other and have more respect for each other. I have very few discipline problems in class. When kids feel better about themselves, they tend to try harder."

Of the 21 participants chosen to participate in the interview sessions, 14 identified the Dr. Lee Jenkins Model as the easiest to use of the three programs in terms of instruction, preparation, and student evaluation. The majority of

participants cited the fact that it is a ready made program as a reason along with the fact that it required no teacher preparation. An elementary teacher explained,

> The Dr. Jenkins Model is cut and dried. The quizzes are all prepared for you. Tribes and Differentiation take so much time for me to prepare—and I can't use the same projects and ideas next year because the make-up of my classroom will change.

A middle school teacher stated, "The quizzes have already been developed using the essential elements of the subject. I simply administer the quizzes, record the scores on the software, and track the progress of individual students and the class as a whole."

In terms of DuFour's model of professional development, Daisy Public Schools only asks two questions: 1) What aspects of this training did you find most beneficial? 2) What questions do you have about this program that need to be addressed during a future training session? This evaluation is inferior when compared to DuFour's (Spring, 2004) evaluation questions for schools to use to identify their staff development programs as an enhancement of or hindrance to improving their students' learning: 1) Does the professional development increase the staff's collective capacity to achieve the school's vision and goals? 2) Does the school's approach to professional development challenge staff members to act in new ways? 3) Does the school's approach to professional development focus on results rather than activities? 4) Does the school's approach to professional development demonstrate a sustained commitment to achieving

important goals? The evaluation questions used at Daisy Public Schools are less comprehensive when compared to Guskey's (2000) evaluation model. Out of Guskey's five evaluative levels, the Daisy School District only evaluates one: participants' reactions to the experience. The addition of the remaining levels (measuring the knowledge, skills, and attitudes that participants gained; organization support and change; whether participants are using their new knowledge and skills on the job; and the impact of the professional development program on student learning) would better identify whether or not training in the three programs should continue.

General Findings. The results of this study highlight several important findings that are crucial in order to understand the effects of professional development on classroom teachers and corroborates much of the research to date. This study supports the notion that staff development is strongly related to classroom teachers' knowledge, skills, and practice as well as teacher perceptions of student learning. This study also contains evidence that professional development led to important improvements in the classroom, which then led to improvements in student learning.

This study has confirmed other research studies indicating that teachers believe staff development is important and worthwhile and, in general, teachers are committed to the concept of staff development (Brimm & Tollett, 1974; McBride, et al., 1994; Smylie, 1989). As indicated by the results of the surveys and interviews, staff development does have the capacity to affect teachers in a

positive manner. The overwhelming majority of participants stated the staff development program in which they were trained was beneficial and gave them the opportunity to learn additional skills and strategies to do their job. They viewed staff development as assisting them in teaching the district curriculum and standards. They acknowledged the importance of adopting new teaching strategies and changing their practices to meet the new standards and expectations for student learning as educational research continues to expand on best practices in teaching and learning.

This study supports the research literature that indicates change in teacher practice and the subsequent impact on student learning are not considered when evaluating the effects of professional development (Guskey, 1994; Guskey & Sparks, 1991; Todnem & Warner, 1994; Sparks & Hirsh, 1997). The Daisy Public School District's evaluation of their professional development programs only addressed teachers' questions about the program and asked teachers to identify the aspects of the training that were beneficial. It does not assess their impact on student achievement.

The findings support DuFour's (2001) belief that one of the most common mistakes made in attempting to implement an innovation in any organization is the failure to support it and sustain the effort until it is institutionalized. Many teachers from each training program commented on the lack of collaboration time. Guskey's (2000) statement that one cannot get ironclad proof as to whether or not professional development improves student performance is also supported by this

study. Many teachers were unable to provide concrete evidence of increased student academic achievement. Guskey's (2000) viewpoint that administrator knowledge and practices are also directly influenced by the quality of professional development is also support by this research. Many teachers cited the lack of support from administrators in ensuring the programs successful implementation.

Recommendations

Although the results of this study may not be generalizable to other school districts, there are clear implications for all educators involved in professional development. Based on the findings of this research and other similar studies, the following recommendations are made:

1. Professional development experiences should focus on improving student learning, but in conjunction with teachers' interests and needs without neglecting organizational and cultural factors that are an integral part of an educational environment. When teachers are able to see the positive results on student learning, they are more apt to become committed to new instructional methodology.
2. Professional development must be viewed from a growth model that advocates for continuous learning across the continuum of a teacher's professional career. It must not be considered separate from teachers' daily practice.

3. Participants in all three programs suggested collaboration time to help them use the program in their classroom. Formalized procedures for follow up and support are critical elements to sustain a change in practice.
4. School district policy should require systematic evaluation of professional development programs including both formative and summative methods that gather and analyze data at each of the critical levels of evaluation. This evaluation report should be presented to all stakeholders in the educational community on a regular basis.
5. Since research studies examining the link between professional development and student achievement are rare, further research in this area is a significant need; particularly in response to current reform efforts, new expectations for student learning, and the ever changing needs of students.
6. School districts should develop an evaluation model to determine the impact their professional development programs have on student academic achievement.

Summary and Conclusions

Professional development is the bridge that allows educators to enhance their professional knowledge and practices. We must look at how to better understand the influence of professional development if we believe that it can make a difference in the lives of teachers and students (Guskey, 1997). Researchers have attempted to determine the true impact of professional

development, but have met with little success (Guskey, 1997). One cannot get ironclad proof as to whether or not professional development improves student performance (Guskey, 2000). However, Guskey (2000) stated, "In the absence of proof, you can collect very good 'evidence' about whether or not professional development is contributing to specific gains in student learning" (p.87). The evaluation of teacher acquisition of knowledge and skills and subsequent changes in attitudes and beliefs is pivotal to successful implementation, which precedes improvements in student learning (Guskey, 2000). A well-designed evaluation is the most important indicator of the effectiveness of professional development programs and can also be used to improve future programs (Guskey, 2000).

The purpose of this study was to investigate the effects of professional development on classroom teachers at the school district level. Two research questions pertaining to the programs' use in the classroom and their impact on student academic achievement were addressed. The methodology incorporated in this study was designed to evaluate the effects of professional development on classroom teachers at the school district level. Data was collected through surveys and interviews designed to provide answers to the research questions. The qualitative data was coded and SPSS Statistical Analysis Software was used to conduct t-tests. This study was conducted in the Daisy Public School District, which is made up of a blend of 9,353 suburban/metropolitan students and encompasses 38 square miles. Eighty-three surveys were distributed and 47 surveys were returned for a response rate of 56.6%. Research participants were

classroom teachers who had participated in the most recent professional development program in the areas of Differentiation, Tribes Training, and Dr. Lee Jenkins training.

The results of this study may be used to better understand the effect of professional development and its relationship to classroom teachers and to improve the design and delivery of professional development programs. In addition, the results of this study can be used to define those aspects of professional development that can make significant changes in the knowledge, skills, practices, and attitudes of teachers with the ultimate goal of improving student academic achievement. According to Guskey (2000), there have been many successful professional development efforts. However, what is lacking is evidence to document and delineate the difference between the good and the bad professional development programs. Evaluation is the critical component to determining those differences as well in determining how and why they occurred (Guskey, 2000). As teachers are continually changing their practices to meet the challenges of educating students in the 21st century, it is critical that teachers learn how to document improvements in student learning on a daily basis (Sparks, 2000). Perhaps by exposing teachers to new teaching techniques and ideas, we can increase the graduation rate. Everyone wins when we can keep kids in school and help them earn a diploma. Cummins and Sayers (1997) found the estimated cost to the nation due to the dropout problem is approximately $50 billion in foregone lifetime earnings. This figure does not include reduced tax revenues,

greater welfare expenditures, poorer physical and mental health of our nation's citizens, and greater costs of crime. I honestly believe my third grade teacher never changed her instructional methods in the 36 years she taught third grade. I am grateful that educators are now exposed to new teaching methods and ideas through professional development and today's students will not have to endure outdated teaching methods used decades ago.

Appendix A

Survey Cover Letter

February 18, 2003

Dear Teachers:

I invite your participation in this research study. The information collected will be very valuable to the Daisy School District. By determining the link between staff development programs and academic achievement of students, we can ensure our funds are spent in the best interest of our students. The results of this study may be published in a dissertation, but your name will not be linked to responses in publications that are released from the project. In addition, I will not have access linking your name to your individual responses. The published results will be presented in summary form only. The name of our school will not be released in the publication.

Thank you for your participation.

Appendix B

Daisy Public School District Campuses

High School
Enrollment: 1,981 students in grades 10-12
Teachers: 123

Alternative Center
Enrollment: 103 students in grades 9-12
Teachers: 8

Freshman Academy
Enrollment: 748 students in grade 9
Teachers: 38

Middle School
Enrollment: 1,410 students in grades 7-8
Teachers: 95

East Intermediate
Enrollment: 895 students in grades 5-6
Teachers: 71

West Intermediate
Enrollment: 491 students in grades 5-6
Teachers: 43

East Elementary
Enrollment: 1,607 students in grades Preschool-4
Teachers: 125

Southeast Elementary
Enrollment: 727 students in grades Preschool-4
Teachers: 55

West Elementary
Enrollment: 1,426 students in grades Kindergarten-4
Teachers: 88

Pre-Kindergarten Facility
Enrollment: 175 students ages 0-5 years
Teachers: 10

Appendix C

Survey

1. Do you regularly use this staff development program in your classroom?

2. Do you have a support network where you meet regularly with other staff development participants to ensure the program is continuously effective in the classroom?

3. Do you perceive the staff development program to have been beneficial?

4. Using the continuum below, place an "X" where you felt your skills were at the beginning of this professional development opportunity and place an "O" where you felt your skills were at the end of the training.

Novice(1) Practitioner(3) Expert(5)

Novice	I feel unsure; I'm just beginning.
Practitioner	I am somewhat comfortable.
Expert	I feel very skilled and comfortable.

5. Does this staff development program give you the opportunity to learn additional skills and strategies to do your job?

6. What recommendation can you make to help you use this program?

7. Would you recommend that the district continue offering staff development in this area? Why or why not?

8. What evidence do you have that would tell you this staff development opportunity has helped students to improve their achievement?

Appendix D

Interview Questions

1. How many years have you been teaching?
2. How many years have you taught in the Daisy School District?
3. Which grade level are you currently teaching?
4. Why are you or why are you not using the program?
5. Was the staff development training sufficient to incorporate this program into your curriculum?
6. Do you have a support network where you meet regularly with other staff development participants to ensure the program is continuously effective in the classroom? If so, who organized the support network? How often do you meet?
7. What recommendation can you make to help you to use this program?
8. Would you recommend that the district continue offering staff development in this area? Why or why not?
9. What evidence do you have that would tell you this staff development opportunity has helped students to improve their achievement in your classroom?
10. Have you also participated in either Dr. Lee Jenkins Model or Tribes Training? If so, which one?

Appendix E

Interview Questions for the Superintendent of Daisy Public Schools

1. What is your philosophy on professional development?
2. What do you hope each staff development program will do for the school system?
3. How do you see these programs fitting into your philosophy?
4. Where do you visualize each program at this point in time?
5. Do you regularly meet with principals to reinforce the importance of using these programs?
6. Do principals regularly meet with their teachers to reinforce the importance of using these programs in the classroom?

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