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THE ROLE OF TECHNOLOGY IN TEACHERS’ PROFESSIONAL DEVELOPMENT

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THE UNIVERSITY OF SOUTHERN MISSISSIPPI

THE ROLE OF TECHNOLOGY IN TEACHERS' PROFESSIONAL DEVELOPMENT

by

Nisrine Nabih Adada

A Dissertation
Submitted to the Graduate Studies Office of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Approved:

August 2007
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ABSTRACT

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Professional staff development is a learning process that teachers go through on a yearly basis. The literature confirms that high-quality professional development has a positive effect on teacher and student performances. Living in today's rapidly changing world, teachers have come to the realization that technology is a vital part of their students' lives. The literature also supports teachers' increasing need for online professional training. The purpose of this research study was to determine K-12 teachers' attitudes toward traditional face-to-face professional development and online professional development. The study also investigated teachers' perceived level of support in face-to-face and online professional training. Furthermore, the study examined teachers' attitudes toward utilizing technology as an instructional tool in their classes before and after they participated in online professional development. The researcher surveyed 1,000 K-12 teachers in nine Mississippi public school districts using a questionnaire; quantitative and qualitative information was gathered. The quantitative data revealed a significant difference between teachers' attitudes toward face-to-face and online professional development; teachers had more
positive attitudes toward face-to-face professional training. Further, the quantitative data related to teachers’ perceived level of support in online and face-to-face professional development revealed significant difference. The results of this study showed that teachers received more support in face-to-face professional development than they did in online professional development. Moreover, the quantitative data related to teachers’ attitudes toward utilizing technology as an instructional tool in their classes revealed significant difference. Teachers integrated more technology into their instruction after they participated in online professional training. Furthermore, the results of this study indicated that the majority of teachers reported their willingness to participate in more online professional development programs. The qualitative data suggested that teachers liked how interactive and convenient online professional training was. Moreover, the qualitative data indicated that ample teacher-involvement and teacher-support were needed for online professional development to be more effective.
DEDICATION

I would like to dedicate this dissertation to my beloved husband, Ahmad, who has been there for me every step of the way and to my precious children, AbdulRahman and Majida, who endured so much, yet were very patient.

I would also like to dedicate this study to my dearest parents, Mr. Nabih Adada and Mrs. Maha Adada, who instilled in me the value of education and taught me never to give up. Thank you, Mother and Father for believing in me.
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LIST OF TABLES

Table
1. Demographic Characteristics of Sample .....................................................71
2. Factor Loadings.............................................................................................74
3. Summary of the Cronbach Alpha Statistics of the Six Factors ..............76
4. Summary of Means and Standard Deviations for the Three Research Questions .................................................................83
LIST OF ILLUSTRATIONS

Figure

1. Teacher Participation in Online Professional Development ..................72
2. Teachers' Preference for Professional Development ..............................77
3. Teachers' Willingness to Participate in More Online Professional Development .................................................................78
4. Teachers' Satisfaction with Their Districts' Professional Development and Online Professional Development Programs ................................................87
5. Teacher Involvement in the Planning of Professional Development ......88
6. How Much Choice Teachers Have in the Professional Development They Receive ..........................................................................................................................89
7. Impact of Professional Development on Student Achievement ...........90
8. The Value of Technology Integration into Instruction ............................91
CHAPTER I
INTRODUCTION

The first chapter of this study introduces the topic to be examined. It presents a glimpse of the related literature. Moreover, it states the problem to be studied as well as the research questions. Definitions of some terms used in the research study and the assumptions the researcher had are also reported. The delimitation and limitations related to this specific study are listed followed by justifications and the purpose behind the study.

"Professional development is a growth-promoting learning process that empowers stakeholders (teachers, administrators, staff, and other school personnel) to improve the educational organization" (MDE, 1998). A variety of school systems around the world suffer from the lack of professional development causing serious problems. "Consensus is growing among school reformers that teachers are the most important school-related determinant of student achievement" (Berry, Hoke, & Hirsch, 2004, p. 2). Oelrich (2001) confirmed that according to The National Staff Development Council (NSDC), in order for students to grow intellectually, teachers should continually learn. Teachers in the United States should have access to innovative, ongoing learning opportunities so that they can offer their students high-quality education.

Teachers, even if highly-educated and well-experienced, need to always be updated with new information. Mississippi Department of Education (MDE, 2003) requires K-12 teachers to have at least five Continuing Education Unit (CEU) credits in a five-year interval for licensure renewal purposes. Educators
have to be given the chance to keep learning so that they continue to grow.

"Teachers need ongoing, high-quality professional development that offers relevant, evidence-based materials for improving teaching, learning, and student outcomes" (Adsit, 2004, p. 4). Unfortunately, research illustrates that most staff development training is still done in secluded workshops and is not related to the reality of classroom practice (Gross, Truesdale, & Bielec, 2001).

The No Child Left Behind Act (NCLB) calls for each child to be taught by a qualified teacher; the NSDC added to this requirement that all teachers should receive high-quality professional development by the year 2007 (Salpeter, 2003). When educators persist on expanding their horizons they are paving roads of success not only for themselves, but also for their students. Through diverse professional development programs, teachers communicate and share experiences with other learned intellectuals. Such programs enable teachers to expand their knowledge base. This has a direct positive effect on teachers’ and students’ performance. Teacher education and professional staff development improve student achievement (Darling-Hammond, 1997). Teacher quality is one of the basic determinants of the advancement in student achievement (Hirsh, Mizell, & Aviss-Spedding, 2005). For schools to change, teachers need to change their practices. The role of professional development is to assure teacher quality. Professional development, therefore, should be a fundamental element of every school system.

For a professional development program to succeed, it should be carefully chosen. Educational leaders have to consider the needs of students as well as
teachers before they start planning. They also have to be very supportive and understanding. According to Clement and Vandenberghe (2001), there is consensus among educators worldwide that in order for teachers to develop professionally, they should be supported and encouraged. Teachers, on the other hand, have to be open-minded and ready for change. Joint planning, collaborative implementation, and cooperative assessment are key factors for a professional development program to be successful (Goodlad, 1994). Members of a school community have to work hand in hand for professional development to occur. Hawley and Valli (1999) noted that professional development should be ongoing, on-site, derived from practice, focused on enhancing student performance, based on teacher collaboration, and directly related to teachers' needs.

Educational leaders involve teachers and staff members in professional development programs to improve their performance. Professional development can be done through lectures, workshops, conferences, mentoring programs, online courses, or regular graduate courses. Professional development programs allow teachers to share experiences. They help educators learn from each others' success and failure. Furthermore, they allow teachers to update their information on the subjects they teach.

Teachers feel very uncomfortable when their students know more about the topic being taught than they do. Living in a high-tech world, students need their teachers to be able to live up to the challenge. The only way for them to do so is via quality professional development. Educational leaders have to be
cognizant of the reality that students as well as a number of K-12 teachers are considered *Digital Natives*. They are individuals who rely primarily on their visual sense to collect data (Weiler, 2004). According to Oblinger (2003), people who belong to the *Digital Generation* learn best when technology is utilized in their learning environment; they also prefer team work to individual work. Moreover, Weiler noted that *Digital Natives* favor hands-on experiences that have a meaningful connection to their needs. Identifying the K-12 teachers who belong to the *Digital Generation* and knowing their specific needs, educational leaders will plan effective, meaningful professional development training.

Online professional development is one of the most useful processes through which teachers can keep up with the rapidly growing world of technology. The Internet is the fastest means for teachers to learn new instructional tactics (Golden, 2004) and share them with other educational experts all around the world. However, Hokanson and Hooper (2004) affirmed that computer technology has not been effectively implemented in classrooms. Staff members, teachers and administrators can participate in numerous professional experiences via the Internet. By offering online learning to K-12 teachers, "schools are not bound by the limits of time and substitutes" (Anderson, 2000, p. 27). Educators can download lesson plans, curricular activities, and instructional strategies from educational websites anytime. Moreover, they can have access to Internet libraries that are packed with educational resources. Teachers can also register for online courses that can help them learn more about what they teach and how they teach it. Ongoing professional development and abundant
access to computers and the Internet will lead to effective use if teachers are properly trained and well encouraged (Ertmer et al., 2002). Computer integration is more than just hardware access. “It’s not just about computers, it’s about education” (Hokanson & Hooper, 2004, p. 251).

The Partnership for 21st Century Skills (2004) referred to the significance of technology integration in education in its policymaker’s guide. It emphasized that integrating 21st century skills into curriculum and instruction will make learning germane to students who already lead stimulating, digital lives outside of school. Students who use technological devices and gadgets extensively in their daily lives need the same advanced technologies to be incorporated into their learning (Louie & Hargrave, 2006).

Anderson (2000) affirmed that educational leaders should take full advantage of the Internet. They should use it as a vehicle for delivering quality professional development. Technology-based staff development tied to the proper kind of support and guidance results in teachers’ growth.

This research study investigated the rewards and drawbacks of online professional development in comparison to traditional face-to-face staff development from the vantage points of K-12 teachers.

Statement of the Problem

“Successful professional development programs strengthen the effectiveness of the educational organization, lead to improved student learning and performance, and promote professional growth for all employees” (MDE, 1998). Without quality professional development training, the school system as a
whole suffers tremendously (Barth, 2001). Educators need to expand their horizons. They need professional staff development to improve their performance in the classroom. Teachers should be given the opportunity to update their instructional methods. They need to be familiarized with the latest techniques that other teachers are using worldwide. Professional development gives educators the chance to ameliorate their instruction (Bryan, 2000). When their instruction is enriched with the latest information and techniques, their students' achievement greatly improves. The lack of effective professional development processes may mean boring, even chaotic classes. Students tend to get bored easily if their teachers do not vary their techniques. This boredom usually causes the students to misbehave, which eventually leads to turmoil in the classroom.

Online professional development programs are in high demand among educators nationwide. Wang (2000) affirmed that educators in this day and age are conscious to the bare fact that technology is here to stay, so more teachers are yeaming for online professional training. However, technology integration is still considered to be “an option” in many schools. The data collected from The Mississippi Online Technology Evaluation (MOTE) study held by the MDE in 2002 to evaluate where technology stands in Mississippi public schools indicated that “the percentage of teachers that facilitate the integration of technology across the curriculum is 54%” (MDE, 2004, p. 3). Data from the MOTE study also showed that very few teachers (only 1%) made use of the online professional learning they had received (MDE, 2004).
The Public Broadcasting Services (PBS) TeacherLine is an educational resource that provides K-12 teachers and principals with a variety of online professional development opportunities. Some of these online learning programs are directly related to specific contents, yet others deal with technology integration, methodology, classroom management, and the like. PBS TeacherLine offers Continuing Education Units (CEU) as well as facilitators who guide and support participating teachers and administrators throughout the whole process.

If teachers believe online professional development is more beneficial than traditional staff development, then educational leaders have to ensure that their teachers are getting the training they value. Teachers have to be involved in professional staff development that “makes sense to them.” The way teachers view professional development affects their performances. If they believe that the professional development conferences they are attending are dull, boring, and ineffective, they will neither enjoy them nor benefit from them. However, if teachers are given the chance to participate in professional development programs that are intriguing, beneficial, and effective, they will not only be pleased, but also prosper (Bryan, 2000). Teachers who strive to help their students grow intellectually, cognitively, and emotionally, call for high-quality professional development programs that help them keep up with our expeditiously changing world.
Research Questions

The following research questions were set to determine educators' attitudes toward online professional development and traditional face-to-face professional development.

1. Is there a statistically significant difference between K-12 teachers' attitudes toward online professional development and their attitudes toward traditional face-to-face professional development?

2. Is there a statistically significant difference between K-12 teachers' perceived level of support in online professional development and their perceived level of support in traditional face-to-face professional development?

3. Is there a statistically significant difference between K-12 teachers' attitudes toward utilizing technology as an instructional tool in their classrooms before and their attitudes after participating in online professional training?

Definition of Terms

Andragogy: Knowles' learning theory that proposed adults learning has to be experience-based.

Asynchronous Courses: Online courses that are available 24 hours a day (Killion, 2000).

CEU (Continuing Education Unit) Credit: Teachers ought to receive CEU credits in order to keep their certification. In Mississippi, holders of Bachelor's and Master's degrees are required to have at least 5 CEUs in a five-year cycle.
In general, every five training hours equal to one half of a CEU credit. (MDE, 2003).

**Digital Natives**: People who view technology as part of their natural environment. They are born after 1980 (Oblinger, 2003).

**Drive**: In Hull’s Drive Reduction Theory, drive refers to the adults’ desire to learn.

**EETT**: Enhancing Education through Technology federal grant. State education departments give this grant to schools to get technological tools, Internet access, and online professional development.

**Facilitator**: Person who guides and supports teachers throughout the professional development program.

**Intranet**: A network that resembles the World Wide Web, but people who work in a specific organization are the only ones who have access to it.

**Liaison**: Contact person.

**Learning Community**: A group of people who work collaboratively. They use their team power and expertise to help each other learn and achieve their common objectives.

**MDE**: Mississippi Department of Education.

**MI**: Gardner’s Multiple Intelligence Theory.

**NCLB Act**: The No Child Left Behind Act that mandates that all children should be performing at grade level by 2013.

**NPEAT**: The National Partnership for Excellence and Accountability in Teaching is an association of 29 organizations. These national organizations
participate in research-based studies to improve the performance of teachers and students.

**NSDC:** The National Staff Development Council.

**Online Learning:** Learning that is done via the Internet.

**OPDA:** Online Professional Development Activity.

**PDA:** Professional Development Activity.

**Synchronous Courses:** Online courses that require learners to be online at the same time (Killion, 2000).

**Technology-Mediated Professional Development (TMPD):** Training that is done through the use of media including: videos, televisions, cameras, tapes, and computers (Adsit, 2004).

**Virtual University:** A university that offers degrees that are fully online.

**World Wide Web (WWW):** The worldwide network of web pages-electronic documents that include text, illustrations, audio, and video.

**Assumptions**

The following assumptions were set by the researcher:

- All educators who responded to the survey had participated in at least one professional development program.
- Everyone who answered the survey instrument did so honestly and without duress.
- Everyone who filled out the questionnaire read the instructions carefully and followed them specifically.
Delimitations

The researcher expected the following to be delimitations of this particular research study:

- The researcher mailed the survey instruments to superintendents who submitted them to principals. One of the limitations was that the survey instruments might have not been distributed in a timely manner. The ideal case would have been for the researcher to mail the questionnaires to individual teachers. Due to geographical, monetary, and time issues that was implausible.

- A large number of targeted teachers might have had no experience in online professional training which might have affected the results and findings.

Limitations

The following facts limited the research study:

- The sample included educators from only one southeastern state—Mississippi.

- Only K-12 educators who teach in The Mississippi Public School System were targeted. The sample did not include private school teachers.

- The researcher was not capable of determining the perceptions of teachers who had never participated in professional development training.

Justification

This research study is of potentially great value for educators especially ones who work in or are associated with K-12 schools in Mississippi. The findings
of this study can help educational leaders better plan professional development of K-12 teachers. This research allows principals, superintendents, and professional development coordinators to see the presumed value of online professional development programs from the perspectives of the teachers. The study tested whether K-12 teachers view online professional development as an essential rather than optional ingredient of their professional lives. Technology is an instrument educational leaders need to use to help teachers receive ongoing, collaborative professional development training (Salpeter, 2003). When teachers are given the chance to participate in online professional development programs in addition to regular staff development training, they will be engaged in rich, interactive experiences that not only enlarge their knowledge base, but also inform them of different ways in which they can better their performances in class (Anderson, 2000). This study also investigated the difference in K-12 teachers’ perceived level of support for traditional professional development as opposed to online professional development.

Another purpose of this study was to investigate how educators who were exposed to technology-based professional development training felt about integrating technology into their instruction. Educational leaders need to know whether an increase in teachers’ participation in technology-oriented professional training, amplifies technology incorporation into classroom instruction.

"Offering only face-to-face models of staff development or only offering online models of staff development will hinder the learning process of the teachers involved" (Cole & Styron, 2006, p. 33). This study was not intended to
explore whether online professional development should replace other kinds of professional development techniques, but rather to examine the potential value and power of online training in the professional development of educators. This research study was conducted to determine whether online professional development should complement other staff development strategies incorporated in K-12 schools.

Purpose of Study

Professional development is an integral part of almost every educational institution in every state. More schools worldwide are implementing online professional development programs to train their teachers and administrators. As leaders of professional development, educational leaders have come to the realization that technology is here to stay (Wilcox, Bauschard, & Osterhus, 1998). The purpose of this research was to study Mississippi school teachers' attitudes toward professional development. The researcher was interested in knowing if Mississippi K-12 teachers find online professional development more useful and beneficial than traditional face-to-face professional development. The researcher was also interested in investigating if there was a difference in the perceived level of support K-12 teachers received in online professional development versus face-to-face professional development.

The researcher also studied these teachers' attitudes toward incorporating technology into their instruction. The study was designed to explore whether teachers who believed that learning could actually occur in an interactive, engaging way, would then be encouraged to have their students gain knowledge
in the same way. The study was set to determine if K-12 teachers integrated more technology into their classes after they participated in online professional development. It was also set to determine if Mississippi teachers were more comfortable assigning technology-based tasks to their students after they took online professional training. Moreover, the researcher was interested in finding out what valuable professional development was according to K-12 teachers to help determine if online training was more effective than traditional training.

Summary

The first chapter of this research study talked about the need for high-qualified teachers and the value of both traditional and online professional development. It also stated the problem and the research questions this specific research study investigated. Definitions of some terms were also presented followed by the assumptions the researcher made. This chapter also included the delimitations and limitations of the study. Justifications of the research study followed by the purpose were also discussed.
CHAPTER II
REVIEW OF PERTINENT LITERATURE

Introduction

An extensive amount of literature has been written on professional
development and teacher learning in the past decade (Borko, 2004; Richardson
& Placier, 2001). The literature on teacher quality is saturated with research that
supports the fact that teachers need to know their subject matter and how to
teach it. Recent studies show that professional support and redesigning schools
are important factors for effective teaching (Berry, Hoke, & Hirsch, 2004). Haar
(2001) stated that ongoing, high-quality professional development guides,
encourages, and strengthens educators. However, only a tiny portion of what is
known about high quality professional development is employed in schools
(Sparks, 2002).

According to the Mississippi Department of Education (MDE, 1998):
Educators must have time, resources, and opportunities to assess their own
teaching methods, to develop and learn new subject matter, to work together
as professionals, to develop and implement school improvement plans, and to
stay abreast of current research in their fields of study. Professional
development is essential to school improvement and must be seen as an
investment in life-long learning for all educators.

Moreover, The No Child Left Behind (NCLB) Act mandates that all
teachers of core academic subjects should be highly qualified by the academic
year 2005-2006. The law requires state departments of education to give
evidence of what they are doing to improve teacher quality. Another objective of NCLB is that all students become technologically literate by the end of their eighth grade.

"In 1996 the State Board of Education approved a new professional development model which supports educators in meeting the ever-changing needs of students as they prepare for the challenges of a technologically advanced society" (MDE, 1998). Richard W. Riley- Secretary of Education- once said, "Computers are the 'new basic' of American education, and the Internet is the blackboard of the future." Online professional training helps teachers educate today's youth in a way that prepares them for tomorrow's high-tech world. According to Killion, online professional learning has the potential to enrich educators' experiences. Yet, "all the bells and whistles made possible with technology will not produce results for students or educators unless the technology supports high-quality learning for educators" (Killion, 2002, p. 6).

Theoretical Framework

Various research studies confirm the vital need for teachers to participate in "meaningful, effective" professional development training. Knowles' theory of andragogy proposed that experience should be the origin of the learning activities of adults. Adults want to learn concepts and issues that are directly related to their careers or daily lives in an experience-rich setting. Moreover, their learning has to be problem-oriented rather than content-driven. Adults learn best, according to Knowles (1980), when they are given the opportunity to experiment, not when they are lectured to. This is directly proportionate to the way teachers

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need to be trained. Online professional training gives teachers the opportunity to not only learn through experimentation, but also deal with actual problem-based situations as opposed to hypothetical concepts. It also gives them a chance to enhance their knowledge in fields that are directly connected to their profession.

Hull et al. (1940) argued that drive is a critical element for learning to occur. Individuals, according to the Drive Reduction Theory, do not gain knowledge unless they have a desire to learn. Hull et al. also proposed that the learner has to be attentive. If a teacher just “attends” a staff development lecture or conference that does not guarantee learning. Furthermore, the learner should respond to the amount of knowledge provided; being active is crucial. Finally, Hull et al. suggested that the learning must satisfy the learner’s wants. Online training programs are interactive; they allow teachers to be active learners. Educators who participate in online professional training are not only attentive, but also willing to learn.

Professional Staff Development

Exceptional teachers are the foundations of excellent schools; therefore, improving teachers' skills and knowledge should be one of the most prominent investments school leaders make (Holland, 2005). Haar emphasized that quality, ongoing professional development is a must for any school system to succeed. If teachers stop growing, their students cease to grow, too. Teachers' knowledge and skill is what influences student learning and achievement. Caring, qualified teachers are needed for every student to be guaranteed proper education. In order for educators to be competent, they should be provided with high-quality
professional development training. For some educators, professional development is "necessary evil" (Haar, 2001, p. 6) - something that they are forced to do. On the contrary, it is a powerful tool for implementing innovation. The only way school systems can move from where they are to where they want to be is through professional staff development. School improvement cannot happen without people improvement (Haar, 2001).

Bryan (2000) affirmed that continuous, focused professional development is the most effective way to build teacher capability. Meaningful staff development meetings promote collegial conversations which lead to teacher professional growth. Effective teaching is based not only on what teachers know. Teachers should know their subject matter well; they are also required to know how to teach it. Quality professional development programs can provide educators with the knowledge and the skill they need to dramatically increase and better student learning (Bryan, 2000; Reid, 2002). Student achievement also improves when professional development focuses on teachers' knowledge of how students learn (Holland, 2005).

According to Sparks (2002), teachers as well as principals can better their performances through professional learning. Teachers' professional development training is a key for determining the quality of teaching. The National Partnership of Excellence and Accountability in Teaching (NPEAT) stated in its 1999 report that Michael Fullan (1999) believed that:

School improvement happens when a school develops a professional learning community that focuses on student work and changes teaching. In order to do
that, you need certain kinds of skills, capacities, and relationships. Those are what professional development can contribute to. Any school that is trying to improve has to think of professional development as a cornerstone strategy. (as cited by NPEAT, 1999, p. iii)

Linek, Fleener, Fazio, Raine, and Klakamp (2003) reported the results of a five-year study in which a university worked with a public school district to form a professional development program that could enhance student achievement. The study took place in a small city in Texas. The school district served 4,000 students. It had an early childhood development center, six elementary schools, one intermediate school, one junior high school and one high school. The study focused on what happened at three of these public elementary schools when a field-based teacher education initiative was supplemented by an Academics 2000 grant for professional development. The grant was funded by the Texas Education Agency. Teachers, administrators, and university personnel collaborated in this project. Every year there were about 45 teachers, liaisons, and administrators who participated in the study.

One faculty member was hired as a liaison to help determine the needs of teachers and faculty members of the three elementary schools. After in-service, the needs of students and teachers were diagnosed, and then they were matched to the professional training topics. Teachers were then provided with various professional development programs including: campus participation in off-site training, contracting consultants for on-site training, and using a "trainer of trainer" model in which educators would be involved in formal training and on-
campus study groups. The professional development workshops and training sessions were highly valued by educators. Teachers stated that these professional development programs enhanced their “bag of tools.”

Data used in this study were gathered over a period of five years. The first year (1993-1994) was the baseline year prior to the staff development and teacher education implementation. The 1994-1995 year was the second baseline year during which the professional development program and teacher education were implemented. The remaining three years (1995-1998) represented the data that were collected during the funding of the Academics 2000 grant that included self-selected professional development activities.

Professional development in the first year of the Academics 2000 grant incorporated leadership training, training related to diversity in learning, and programs planned to improve student achievement. During the second year of the grant, educators selected professional development sessions related to student leadership, technology, and programs designed for developing instruction. During the third year of the professional development program, teachers chose sessions that focused on character education, curriculum integration, and student inclusion.

The results of the study indicated that elementary teachers perceived the professional development sessions to be highly effective. They were encouraged to share what they learned in these sessions with their peers. The study also showed that enabling classroom teachers to be more responsible of their own professional growth helped educational leaders meet the needs for their
teachers. This made educators more aware of their students' individual needs and the materials they taught. The staff development program benefited the elementary students in various ways that led to a great improvement in their achievement. The Texas Assessment of Academic Skills (TAAS) scores of the third and fourth graders of the three studied campuses showed a significant increase. By the end of the third year of the staff development program, the third and fourth grade students received “exemplary” ratings. At the end of the 1998 school year, 90% of the students in the three controlled campuses passed the reading, writing, and mathematics TAAS. During the five-year review period, campuses 1, 2 and 3 showed positive passing rate gains of 13.3%, 14.7% and 8.3% in reading and 13.1%, 28.8%, and 16.5% in mathematics, respectively (Linek et al., 2003).

The findings of this study suggested that professional development is an effective way to enhance student achievement. Moreover, the researchers reported that collaborative planning, implementation, and assessment of professional development programs are essential to shift the focus from the way educators teach to the way children learn. Such staff development programs empower teachers and educational leaders and assist them in their continuous professional growth.

Aims and Purposes of Professional Development

Today, the problem with the majority of the schools “isn’t that they are no longer what they once were; the problem is that they are precisely what they once were” (Barth, 2001, p. 28). The primary aim and ultimate purpose of
professional development is the improvement of the entire school community including: students, teachers, staff members, administrators, and educational leaders.

Holland (2005) stated that a deeper understanding of how teachers learn and how students think has lead educational leaders to realize the great impact professional development has on teachers and students. The aim of professional development is not only to improve teachers' knowledge of the subject they are teaching, but also to increase their understanding of how their students learn. According to Linn (2005), The NCLB approach for accountability is based on student achievement. If by the academic year 2013-2014 students' scores in a specific public school are not up to the standards set by the NCLB Act, the school will be held accountable because it did not meet the NCLB mandated requirements (Linn, 2005). Student achievement is highly affected by teacher learning; the more effective professional development is the greater impact it has on student performance (Berry, Hoke, & Hirsch, 2004; Haar, 2001; Hirsh, Mizell, & Aviss-Spedding, 2005; Reid, 2002).

**Different Forms of Staff Development**

Drago-Severson (2002) stated that according to the emerging literature, there are six types of staff development models: training (teachers are guided by an expert), involvement-in-an-improvement process (teachers are part of the school improvement plan, observation/assessment (teachers are observed by educational leaders and then evaluated), inquiry (teachers hold investigations to
find answers), self-directed (teachers are responsible for their own professional learning), and mentoring (each teacher is guided and coached by a mentor).

Drago-Severson and Pinto (2003) reported that there are two forms of staff development: formal and informal. Formal professional development includes workshops and conferences while informal staff development includes ongoing conversations about students, developing and critiquing lessons, and researching. Teachers prefer informal professional development to formal professional development (Drago-Severson & Pinto). On the other hand, Louie and Hargrave (2006) stated that there are three different forms of staff development: 1) Formal professional development- “technology workshops, summer institutes, credit courses, and study groups” (p. 15); 2) Ongoing or informal professional development- “coaching, mentoring, and co-teaching” (p. 15); and 3) Online professional development- “online courses and online workshops” (p. 15).

*Peer Mentoring* is a professional development tool that educational leaders can use to help educators improve their instruction. Anderson (2000) suggests that many teachers favor learning from other teachers. Schools should be learning environments of collegial support. An educator who has recently completed a particular university course, for instance, should be encouraged to share what was learned with colleagues via peer coaching. The educator can invite teachers to attend class so they can experience the “new” instructional procedures and strategies being applied. The coach or mentor also attends the
classes of his/her peers and helps them implement the newly learnt strategies in their classes.

Haycock’s Education Trust Organization offers staff development programs that engage teachers in many discussions about what they are teaching and how they are teaching. *Standards in Practice (SIP)* is a program through which educators discuss students’ results and how students’ achievement can be improved. Teachers meet on regular basis during schooldays to examine student work. They assess and evaluate students’ performance based on the school standards. Then they decide what strategies are to be implemented for getting better results. This staff development program generates a support structure that shields teachers- especially novice, inexperienced ones. This leads to remarkable improvements in teachers’ performance and students’ achievement (Hirsh, 2005).

*Courageous Conversations* according to Singleton- the president and founder of Pacific Educational Group (PEG)- help educators become more productive. They also make teachers become more passionate learners; therefore, they should be used as professional development tools. When educational leaders, teachers, and students engage in courageous conversations, students feel less threatened and thus learn more. Singleton encourages teachers to talk to their students about racial issues, poverty, and respect. Such conversations among school community members influence students’ and teachers’ growth tremendously (Hirsh, 2005).
Hirsh (2005) reports that Ron Ferguson’s *The Tripod Project* is another valuable professional development mechanism. Tripod refers to the three elements that Ferguson considers essential for student success: content, pedagogy, and relationships. Faculty members and teachers have to keep these three elements in mind when trying to better students’ and teachers’ performances. Through meetings and planned interactions, educators build a professional community for sharing ideas. Ferguson stresses that the Tripod Project is not a program to force compliance; it is rather one that embodies trust among teachers and promotes trust among students.

According to Sternin and Choo (2000), *The Positive Deviance Approach* can be used by school leaders as a professional development tool. He believes that when someone from outside a particular community provides a solution for a specific problem, community members may not believe him/her because they did not invest in the solution. When this “outsider” leaves, the community will not sustain the changes that the outsider made. Sternin explains that there are six steps in the Positive Deviance Approach: defining the problem, determining the positive deviants, determining the practices of the deviants, designing the interventions, discerning the effectiveness, and disseminating the results. When using this approach, teachers and educational leaders should think of the school as a community and start to change their practices from within the community. As they experience the difference, their attitudes change drastically (Hirsh, 2005).

School systems should follow a comprehensive professional development plan in which more than one of the previously mentioned programs is used.
When educational principals use various types of professional learning processes, they ensure the improvement of instruction (Sparks, 2002). No matter what process of staff development teachers participate in, they will benefit greatly if it is of high-quality (Haar, 2001). Professional development is crucial because it helps teachers, staff members, and administrators do what they always do better (Adsit, 2004).

**Advantages of Staff Development**

Barkley and Bianco (2002) reported that face-to-face staff development training has four advantages. It gives teachers the chance to learn in a *stimulating environment* full of choices. Another advantage is that it provides teachers with *direct feedback*. It also gives participating teachers *time to reflect*. Moreover, this kind of threat-free setting allows for the learners’ *social interaction*, which eventually leads to their growth.

**Disadvantages of Staff Development**

Critics to traditional face-to-face staff development affirm that it *costs educational leaders a lot of money*. They pay enormous prices for substitute teachers, attendance, and lost instruction (Barkley & Bianco, 2002; Dickenson, McBride, Lamb-Milligan, & Nichols, 2003). Another disadvantage to traditional staff development programs- according to Barkley and Bianco- is that they are *not convenient*. Many teachers dread to attend staff development conferences or lectures because of their timing or location. The fact that most face-to-face staff development programs are *not customized* (Barkley & Bianco, 2002) is another drawback; teachers cannot learn at their own pace. If educational leaders...
disregard the individual differences of teachers, they hinder their professional growth. Finally, according to Hirsh, Mizell, and Aviss-Spedding (2005) traditional staff development programs lack collegiality. “Current learning theory indicates that one-shot, one-size-fits-all workshops and training sessions do not recognize or support the needs of teachers as adult learners. Adult learners need active, problem-based, and collegial learning that grows out of and supports the challenges they face in their daily work” (Hirsh, Mizell, & Aviss-Spedding, 2005, p. 13).

**Characteristics of Effective Professional Development**

Anderson (2000) emphasized that high-quality professional development takes time to plan. Decision makers spend a lot of time getting themselves acquainted with the recent research. They then put time into organizing professional development programs. Although professional staff development is time consuming, it leads to better instruction and improved student performance. For professional staff development to be successful, it should have certain characteristics. The characteristics that recurred in the literature are discussed at this point.

**Sustained and Ongoing Professional Development**

Ongoing learning is a crucial part of professional development (Desimone, Smith, & Ueno, 2006; Hawley & Valli, 1999; MDE, 1998; NCLB, 2001; NPEAT, 1999; Hirsh, Mizell, & Aviss-Spedding, 2005; Salpeter, 2003). Teachers need to meet daily to develop a deeper understanding of what students are expected to learn, to examine student progress, to determine what teaching strategies are to
be used to facilitate learning, to critique existing strategies, to develop assessment procedures, to design influential lessons, and much more (Hirsh, Mizell, & Aviss-Spedding, 2005). Moreover, according to Dickenson et al. (2003) professional development should be a sustained activity that teachers can study, analyze, and evaluate. Clement and Vandenbergh (2001) believed that educational leaders should provide their teachers with abundant learning opportunities because this kind of people investment takes the whole school system into a higher level.

Teacher Involvement in Professional Development

Teachers should be highly involved in professional staff development because they know what they exactly need (MDE, 1998). According to NPEAT (1999), teachers should be involved in the professional training program by identifying what they want to learn and what kind of experiences they want to engage in. Dickenson et al. (2003) stressed that teachers' input is a central factor for effective professional development; educational leaders have to involve teachers in their own professional learning if successful experiences are what they thrive. Educators are the professionals who best know what their students really need. Sparks (2002) remarked that powerful professional development engages educators in an intellectually thorough study that meets the requirements of their students.

Students' and Teachers' Needs

According to the Mississippi Department of Education (MDE), professional development should be primarily school-based because it is an integral part to
school operations; professional learning opportunities have to relate to the individual needs of teachers and students (Hawley & Valli, 1999; MDE, 1998). Haar (2001) explained that there is no "one-size-fits-all" professional development that will produce superb results in every educational institution. Professional development programs have to match the culture and needs of a specific school community; their content should focus on what students are required to learn and how to tackle problems students might encounter while learning (Linek et al., 2003; NPEAT, 1999).

Educators should be given the chance to satisfy their students' academic needs while enriching their own practices. Professional development should assess students' outcomes as well as teachers' instruction, and it must be related to a comprehensive change process that focuses on the improvement of student achievement (NPEAT, 1999; Hawley & Valli, 1999). Salpeter (2003) stated that while professional development should focus on the "real" needs of students, teachers, and the school system as a whole, online professional development should focus on the "real" uses of technology, that is, the actual ways that empower teachers' instruction.

The Importance of Collaboration

Salpeter (2003) and Hawley and Valli (1999) affirmed that for teachers to experience all benefits possible from a quality professional development program, it has to be based on collaboration. Adults learn best in groups; therefore, collaborative problem solving should be an integral part of the professional development process (NPEAT, 1999). Educators and professional
leaders should cooperate throughout the entire process of the professional
development training. Quality staff development has to be planned, implemented,
and followed up by a team of professional educators (Goodlad, 1994; Salpeter,
2003). Goodlad emphasized that even the assessment and evaluation of the staff
development program should also be done collaboratively.

Support and Follow-up

For professional development training to be effective, it should involve
follow-up and support (NPEAT, 1999; MDE, 1998; Salpeter, 2003). To support
teacher learning, educational leaders need to form interpersonal relationships
with the teachers and focus on their personal growth (Drago-Severson, 2002).
According to Salpeter, well-trained educational leaders who encourage and
support teachers throughout their professional training are important catalysts for
the maintenance of quality professional development. Principals should also
provide educators with direct feedback and continuous evaluation (Clement &
that supportive leadership is a must in professional development training.

Quality Professional Development

Barnett (2004) reported a study that took place in selected high schools in
South Dakota. The purpose of the study was to figure out the characteristics and
effectiveness of staff development that was incorporated in these selected high
schools. Forty high schools were randomly selected from South Dakota’s school
directory, and ten teachers were randomly chosen from each high school. Data
collection was done through survey instruments that were mailed to each of
those high school teachers. The primary survey instruments were mailed at the beginning of September 1998. The research questions in the survey were directly related to the characteristics and effectiveness of professional development programs that were employed in these forty high schools.

The research findings indicated that most teachers believed that the professional development techniques that were used in their schools promoted their growth. These staff development programs were based on the needs of teachers and administrators. Moreover, the majority of the participants stated that teachers and administrators planned and implemented these programs collaboratively. They formed committees through which they jointly evaluated the professional development activities. Participants also agreed that the mentoring provided by their leaders was an effective staff development tool. Furthermore, they stated that short, well organized staff meetings, which included practical information teachers could actually use in their classrooms, could be very effective professional development means. The study also pointed out that teachers were satisfied with the way their high schools and districts were planning, implementing, and evaluating professional development. They thought it was very effective because teachers, administrators, and educational leaders actively participated in the process (Barnett, 2004).

Today, effective professional development is no longer done via “sit and get” sessions (Haar, 2001, p. 8); it is ongoing training that is supported and followed-up by educational leaders. Quality professional training should be planned with the end in mind and it is the responsibility of superintendents,
principals, professional developers, and teachers (Haar, 2001). According to Zenger and Uehlein (2001) and Burke (1994), effective staff development should include traditional and online professional learning. A blended solution- a combination of online and face-to-face professional development programs- allows each form of training to be delivered in the best possible way with utmost flexibility.

**Online Professional Development**

Hokanson and Hooper (2004) asserted that "The future of technology is not to make education easier, but rather to make learning more effective" (p. 250). There is a rapid spread of Internet connectivity among public schools in the United States (Collins & Dewees, 2001). Wilcox, Bauschard, and Osterhus (1998) emphasized that students are *taking the information superhighway* whether teachers decide to join them or not. Therefore, teachers and educational leaders should know how to use technology- the Internet specifically- as an educational tool. To be able to do that teachers and leaders have to participate in online professional development. Bush (2005) and Fletcher (2005) noted that the significance of technology integration is accentuated in The National Education Technology Plan (NETP) of the No Child Left Behind Act that calls for incorporating technology into professional development and curriculum development to enhance student learning and achievement.

"It is evident that teachers need, and will continue to need, professional development geared toward new technology" (Cole & Styron, 2005, p. 4). According to Oelrich (2001), teachers need professional development programs
that will keep them informed of the latest topics in education without losing valuable instruction time away from their students. As a former specialist in the Information Systems Department of the Pascagoula School District, Dr. Parker once said, "It is not enough to be an active member of a school team; all of our children deserve the benefit of ideas from colleagues throughout the state and nation." E-learning, online education and virtual schools can provide this kind of meaningful professional development. Virtual schools help educational leaders offer their teachers high quality online professional development on technology implementation and other educational topics (Oelrich, 2001).

Research suggests that technology can be a very effective teaching and learning tool in the classroom (Collins & Dewees, 2001); Internet- specifically- is unique in its ability to provide educators with the most accurate and recent information via its advanced communication potentials (Golden, 2004). According to Ireh (2006), technology integration improves students' academic achievements. Realizing the power computers possess as educational tools, teachers nowadays are more willing to integrate computers into their instructions. Computers can be integrated as either teacher-centered tools or student-centered tools. In the teacher-centered integration model, teachers use the computer to plan their lessons, enrich their explanations, or explain certain concepts. On the other hand, in the student-centered integration approach the teacher is the facilitator who assigns computer projects to students. Both approaches empower teachers and students (Wang, 2000).
To ensure that teachers effectively integrate technology in their classrooms, effective professional development is needed. The problems related to integrating technology into classroom instruction can be ameliorated with professional development for both teachers and administrators (Collins & Dewees, 2001). Technology-based professional development should be all about “teaching with technology not teaching about technology” (Ireh, 2006, p. 14).

Effectiveness of Online Professional Development

Bush (2005) discussed what happened to schools in the Mobile County Public School System in Alabama after the introduction of an online professional development program. The purpose of the new staff development plan was to increase teachers’ knowledge in using educational technology which would lead to an enhancement in students’ achievement. The Mobile County Public School System in Alabama is a large school district that includes 103 schools with more than 65,000 students. The district has about 4,000 teachers with widely dispersed locations; therefore, the district’s technology division decided that making an online computer training course available would provide the consistency needed to achieve the state's directive. In 2002-2003 the Mobile County Public School System was awarded an Enhancing Education Through Technology (EETT) federal grant. The $441,293 grant was given by the Alabama Department of Education.

The technology division in the Mobile County Public School System decided to use the EETT grant to implement the new professional development program. They chose the Teachers Discovering Computers course from the
Teacher Education Institute (TEI). The first group of teachers began their professional development lessons in spring 2003. These educators had to produce their own web pages, storyboard a website to support a lesson, plan and design curriculum pages, and develop usable projects that adapted to their specific needs as teachers. To motivate the participants, educational leaders rewarded teachers with computers for completing the online course. All participating teachers also obtained continuing education credits. Because the course lasted for 13 weeks, the technology division assigned a technology resource teacher to take the online course along with classroom teachers. Through this arrangement, classroom teachers were given all the assistance and guidance they needed (Bush, 2005).

The study reported that over 104 teachers successfully completed the online professional development course. Several of these participants requested additional online development courses. Moreover, the study stated that the district was planning to continue offering the online professional development course because teachers confirmed that it was an excellent introduction to technology integration. They also affirmed that it was an effective professional development tool. Based on the results of the study, educational leaders in the Mobile County Public School System stated that The Teachers Discovering Computers online professional development course made a difference in the use of technology by their teachers. It presented an excellent overview of technology integration for classroom educators. The technology division in the Mobile County Public School System decided that teachers who completed the
Teachers Discovering Computers foundation course may be offered more advanced online professional development courses such as the institute's Teachers Discovering & Integrating Microsoft Office and Teaching with Web Quests online courses (Bush, 2005).

Different Forms of Online Professional Development

Killion (2000) suggested that online learning can help build educators’ expertise using convenient, user-friendly technologies. Online professional development includes various types of technology. Killion (2000) stated that online—when used in the literature—refers to any kind of instruction that is delivered via the World Wide Web. However, other kinds of computer-based programs that are on CDs or delivered via Intranet are also called online. In 2002, Killion introduced new definitions to differentiate between computer-based professional development and Internet-based professional development.

Computer-aided instruction and tutorials are examples of computer-based learning; online courses and web-based videoconferencing are examples of Internet-based learning (Killion, 2002).

According to Vojtek and Vojtek (1996) quality professional development can be done online in a variety of ways. The Internet is a very powerful tool through which teachers can accomplish a lot of tasks. Teachers can access articles, books, and journals and obtain information from different databases in libraries around the world. They can also visit virtual museums, historical sites, international parks, zoos and the like. Educators can get in contact with other professionals via e-mail and share their problems, concerns, and victories. They
can contact professional organizations, too—such as NSDC and MDE. Moreover, educators can access online lesson plans and instructional materials—such as, worksheets; they can even publish their own online materials. Teachers can also conduct research—indeed, or with their students—about topics they are covering in their classes (Vojtek & Vojtek, 1996).

The Public Broadcasting Services (PBS) TeacherLine is one of the leading online professional development resources in the nation. The U.S. Department of Education funded the PBS TeacherLine program as a grant to help teachers become highly-qualified. PBS TeacherLine offers standard-based online courses, which cover the entire curriculum, to K-12 teachers and principals. Educators can register for any online module that is either related to the specific content they teach, their instructional methodology, or technology integration depending on their needs. Online professional development offered by the PBS TeacherLine is self-paced, flexible and research-based. Moreover, teachers can earn Continuing Education Unit (CEU) credits for their PBS TeacherLine courses. Online learning provided by PBS TeacherLine is closely monitored by facilitators who guide and support educators throughout their online professional training. Another asset of the online courses offered by PBS TeacherLine is that they are developed in collaboration with the following top academic organizations: International Society for Technology in Education (ISTE), the National Council of Teachers of Mathematics (NCTM), and The Concord Consortium. PBS TeacherLine also provides educators with My Workspace—a place for them to “bookmark” their favorite Web sites, share their instructional technology tips with other educators,
and post their own reflections. The PBS TeacherLine is one of the teacher opportunities provided by the Office of Leadership and Professional Development at Mississippi Department of Education (MDE). The PBS TeacherLine Web site is found at: [http://teacherline.pbs.org/teacherline].

Advantages of Online Professional Development

Killion (2000) named four advantages of online professional learning. Access to online learning is easy and convenient. It requires a computer, a modem, and the Internet. Online professional development benefits educators who find it difficult to attend face-to-face staff development conferences because of the inconvenient time or location. Online professional development is independent of time and place (Barkley & Bianco, 2002; McKenzie, 1998; Vojtek & Vojtek, 1996). It is available 24 hours a day seven days a week (Bintrim, 2002); teachers can learn and revisit websites at any time (Kenser, 2001). Through online professional development, teachers have access to hundreds of topics provided by various sources, not only their districts (Killion, 2000). Adsit (2004) stated that one of the benefits of Technology-Mediated Professional Development (TMPD) is that it provides teachers with access to a wide variety of resources so that they can better their practices. Glyer (2004) added that one-person departments are common, nowadays. The computer and the various technological tools embedded in the World Wide Web provide all the strategies and plans needed for educators to develop and grow professionally. A single professional development coordinator or principal cannot offer staff development
training to hundreds of teachers within the same district unless it is done online (Glyer, 2004).

Another advantage of online professional learning according to Killion (2000) is flexibility. Participating teachers have the freedom to learn at their own pace (Barkley & Bianco, 2002; Killion, 2000; McKenzie, 1998). Some online courses are unscheduled, for instance, teachers can finish a certain course in six months. Others are scheduled and require teachers to start and end the course on specific dates. While most of the courses are asynchronous- available 24 hours a day, some are synchronous- require learners to be online at the same time. Asynchronous courses allow teachers to control the time they need to spend on a specific session. Some participants devote more time on particular assignments, while others spend more time on discussions or projects. This flexibility makes professional growth accessible to all educators (Killion, 2000).

Cost control is another advantage of online professional development (Killion, 2000). On the long run, district officials can save travel costs and money associated with substitutes, materials, and loss of instruction (Barkley & Bianco, 2002; Killion, 2000; McKenzie, 1998). Another cost efficient factor is ease of modification. Online programs, unlike printed training manuals, are easily and quickly updated. When participating in online professional development, teachers and educational leaders realize that time is better spent. Adult learners have fewer distractions and thus can concentrate more on what they are learning. Some online course developers suggest that one hour of online learning equals to two hours of classroom instruction (Killion, 2000).
Another asset of online professional development according to Killion (2000) is collaboration and interaction. Quality, well-designed online programs encourage adult learners to interact not only with one another but also with the instructor. Adsit (2004) reported that Technology-Mediated Professional Development (TMPD) is a powerful tool because it diminishes teacher seclusion and supplies educators with opportunities for collegiality. Oelrich (2001) explained that online workshops minimize teacher isolation. Being in their classrooms all day, educators have little- if any- contact with other professionals. When they participate in online workshops, they can interact with and learn from teachers at their own schools and others around the nation. Teachers can engage in online group discussions, solve assignments together, work on group projects, provide feedback to one another, and have personal interactions with the instructor (Killion, 2000; Oelrich, 2001).

McKenzie (1998) and Oelrich (2001) stated that another compelling advantage of online professional development is that it allows educational leaders to customize training programs to meet the particular needs of teachers. Instead of having all teachers gather and attend a staff development lecture or workshop, the educational leader can assign different online professional development programs to different teachers based on their individual needs (McKenzie, 1998; Oelrich, 2001).

Bryan (2000) added that e-mail is another advantage of online learning. E-mail is one of the technological tools that make a great impact on teacher
professional development. Through the use of e-mail, teachers can access all the information they need in a fraction of a minute (Bryan).

*Control shift* is another asset of online learning according to McKenzie (1998). Control moves from the instructor to the student teacher. Educators are engaged in actual learning experiences when they participate in online professional learning; they are not just passive listeners who are lectured to.

Kenser (2001) stated that *practice, observation,* and *coaching* are other advantages that are present in the online professional development programs. Educators who participate in online learning have the chance to practice new learned concepts on their own or with the help of the technology instructor who is always available to train them, support them, and give them feedback.

**Disadvantages of Online Professional Development**

According to Killion (2000), there are three disadvantages to online professional learning. When planning online professional development, educational leaders have to think about *hidden costs*- costs that are associated with online learning. Costs vary depending on the program format, hardware and software needed, internet access, course development, and the intended outcomes.

Another pitfall of online learning according to Killion (2000) is *content.* Some contents are not suitable to be delivered online. "Online staff development cannot yet replace the more costly staff development components of practice, coaching, and feedback needed to make and sustain deep and lasting change in practice and ultimately in student achievement" (p. 6).
Killion (2000) explained that another drawback that educational leaders need to consider is learner readiness. Not all teachers are ready for online learning. Some educators lack the motivation, independence, and support required for participating in online professional development. Other teachers might resist online professional development due to their fear of failure when technology implementation is at stake (Oelrich, 2001). Some adult learners need the human interaction that is present in face-to-face staff development, yet scarce in online professional development modules (Kenser, 2001; Killion 2000); educated experts want immediate, tangible feedback (Killion, 2000).

Advantages and Disadvantages of Online Learning According to Richardson (2001)

Richardson (2001) explained that the advantages and disadvantages of online professional development depend on the way it is implemented. Online professional development can be implemented in two different ways. A teacher sits at a computer at home looking at different lesson plans and then answers questions that the instructor posts on the web. When the online course is over, the teacher receives a number of in-service points. The teacher participating in such an online professional development course does not have a chance to interact with other professionals. On the other hand, using conferencing software allows for an interaction with professionals. A teacher is connected online to other educators who teach the same subject matter. They develop lesson plans and edit each others’ work; and after they apply what they have learned in their classrooms, they share their experiences in an online group discussion. Online
professional development— if done the latter way— enables teachers to develop (Richardson, 2001).

The Role of Educational Leaders in Providing Staff Development Programs

_The Influence of Educational Leaders on Staff Development_

A 2000 study by the National Center for Education Statistics (NCES) showed that approximately 2.7 million extra teachers are needed over the next decade to support the United States’ growing public school enrollment. Many schools are struggling to recruit qualified teachers (Oelrich, 2001). However, according to Salpeter (2003), the problem school leaders are facing when trying to maintain highly-qualified teachers is not solved by recruiting new ones, but rather by retaining the existing teachers. The key to holding on to qualified teachers is high-quality, effective professional training.

Researchers emphasize that educational leaders need to view teachers as developing individuals that are either positively or negatively affected by the context of professional development (Johnson et al., 2001). Drago-Severson and Pinto (2003) asserted that “effective leadership for faculty development demands a balance of supporting teachers and gently challenging them while focusing on the interests of students and the school” (p. 37). An integral part of the leader’s role in professional development is one of _guidance and support_ (Drago-Severson, 2002; Haar, 2001; Killion, 2002).

Being staff developers, educational leaders have to set high standards of professional growth for all school community members (Haar, 2001). They should also ensure that the professional development programs teachers, staff

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members, and leaders participate in not only match these high standards, but are also designed to prepare and support educational experts as they engage in the process of change (Holland, 2005).

Teachers must be provided with professional development opportunities that focus on the subject matter they teach. Leaders should make sure that teachers’ professional learning is *aligned with their real, everyday work experiences* (Holland, 2005). Teachers should also be given *ample time* for professional development. It should be a process that stretches over a period of time rather than a one-shot conference or workshop (Haar, 2001; Holland, 2005). Restoring teachers’ workdays might be essential for improving professional development experiences (Sparks, 2002).

Superintendents and school principals need to make sure that school districts use *reliable systems to evaluate* the impact professional development has on teachers’ performances and student learning (Holland, 2005). When professional developers assess and evaluate the professional development programs, they can mend the ineffective ones to best fit students’ and teachers’ needs (Hirsh, Mizell, & Aviss-Spedding, 2005).

According to the Hirsh, Mizell, and Aviss-Spedding (2005), educational leaders should also effectively *seek data* to determine what kind of professional development program they should implement in their district or school. Professional staff development should be research-based (Lauer, Dean, Martin-Glenn, & Asensio, 2005). Moreover, leaders have to ensure that professional...
development training is *team-focused* (Hirsh, Mizell, & Aviss-Spedding, 2005). Adults learn best when they are put in teams (Rose, 1996).

Designing a professional development plan that is *based on the specific needs of teachers and students* is also vital. The leader should make sure that teachers' knowledge and skills are respected and well utilized in the professional development programs; this does not negate the need for teachers to be provided with pertinent research and resources. Leaders should use professional development training as a tool to reinvigorate teachers especially novice, reluctant ones (Haar, 2001).

Decision makers should also make sure that the professional development services are *well planned* (Hirsh, Mizell, & Aviss-Spedding, 2005) with the end in mind (Haar, 2001). Moreover, teachers regard their principals as effective educational leaders when the principals view professional development as a *basic element of their school improvement plan* and have *active involvement* in it (Haar, 2001).

Before implementing a new professional development program, educational leaders have to *plan* it thoroughly based on the purpose, vision, values, and goals of the school (Haar, 2001). The chances of meeting teachers' needs increase when *teachers are actively involved* in the planning of professional development programs. Teacher involvement in planning results in high-quality professional development (Desinone, Porter, Birman, Garet, & Yoon, 2002). "Professional development must shift from a fragmented system based upon one-shot activities to one which is embedded in the every day life of the
school. It must be planned and implemented by the educators it is designed to serve” (MDE, 1998).

District officials have a direct impact on professional development. The results of the study—a comparison of three school districts—done by Firestone, Mangin, Martinez, and Polovsky (2005)—suggested that teaching is affected by the district offices via professional development. The district vision, human resource management, and stress on professional development influence professional development programs. The results of the study showed that the district with the most coherent and focused professional development had the greatest teacher-reported influence on teachers’ performances and practices (Firestone et al., 2005).

School principals and superintendents should also make sure that their teachers and staff members are receiving the technology-based professional development they need. Ongoing evaluation of technology implementations in public schools is fundamental (Collins & Dewees, 2001). According to the National Aeronautics and Space Administration (NASA) and the Gulf Coast Education Initiative Consortium (GCEIC), only 53% of teachers in the United States integrate technology into their instruction. Educators who do not incorporate software or Internet in their classes attribute that to the lack of computers in their classrooms, lack of time, and lack of training in using instructional technology. School principals should ensure that teachers are given the opportunity, time, equipment, and training needed for them to integrate
technology into their classes. Online professional development is the answer (Collins & Dewees, 2001).

Educational leaders have to recognize the great impact they possess on professional staff development (Desimone, Smith, & Ueno, 2006). They should also be conscious of the reasons it might be ineffective, so that they can ameliorate them. These reasons are: lack of teachers' readiness for change, teachers' poor understanding of the professional development basics, teacher resistance to change, lack of resources, lack of support, or lack of appropriate planning (Dickenson et al., 2003).

**What Educational Leaders Can Do to Promote Effective Staff Development**

Educational leaders- whether vigorous or lackadaisical- have a great effect on the quality of teaching. They also play a fundamental role in giving the support and the pressure needed for quality professional development to be started and sustained (Sparks, 2002). Sparks also stated that for transformational change to be accepted, it should begin in the educational leaders. As noted by Dufour and Berkey (1995), professional development for school principals communicates to educators the value of ongoing learning. Through caring about their own growth, educational leaders model how vital professional development really is which helps teachers feel less threatened and more encouraged to pursue their own professional growth. Principals and superintends have to **lead by examples**. They should model professional growth to teachers, administrators, and staff members by participating in professional development programs. They should not only attend the committee meetings but...
also be active participants. The way they talk and the language they use empowers or weakens all members of the school community (Sparks, 2002). Educational leaders have to participate in collecting the data, forming the staff development plan, implementing it, and assessing it (Dufour & Berkey, 1995; Sparks, 2002).

Anderson (2000) stated that educational leaders should build a staff development committee that is made up of teachers, staff members, administrators, and parents. The purpose of this committee is to give its members the chance to share their ideas about the new staff development strategy. Clement and Vandenberghe (2001) stressed that teachers should participate in the planning and decision making of their own professional development. When teachers feel they have control over their own learning, they will be more willing to collaborate and thus develop professionally. Committee meetings are set to provide all committee members with equal opportunities to agree with or object to a certain procedure. Professional development committees should meet before the school year starts and study the staff development program they want to implement. They should then develop a plan after they reach a consensus. Close collaboration among all committee members facilitates the process. Furthermore, the committee members have to closely monitor the application of the new program. They should also evaluate the program by assessing teachers’ and students’ development throughout the school year (Anderson, 2000).
McKenzie (1991) affirmed that for educational leaders to help promote quality professional development, they have to make sure that the staff development programs are experience-based. Teachers, similar to their students, learn by doing. Sitting and listening passively to staff development lectures, teachers would not benefit as much. Dickenson et al. (2003) stress that it is not sufficient for educational leaders to simply expose teachers to new ideas in lectures and workshops; educators should have an active role in the process. For educators to change the way they have been teaching for the past few years, they have to be actively involved in their own professional development practices (McKenzie, 1991).

Teachers, especially novice ones, fear change (McKenzie, 1999). Educational leaders, being the professional development experts, should keep this phenomenon in mind. To help reluctant teachers overcome their doubts and anxieties, administrators should show them measurable results of students' achievements. They have to present proof that students' test scores have improved after the teachers joined certain professional development programs. Moreover, educational leaders ought to eliminate all risks and surprises, at least until the teachers get used to the new system. Teachers should be given experiences that require little risk at the beginning of the professional development plan (McKenzie, 1999).

As noted by Dickenson et al. (2003), any deviation from teachers' "established practices" or "comfort zones" may lead to confusion and discomfort. Therefore, principals and superintendents have to offer ample support and
encouragement to their teachers and staff members. Guskey (2002) explained that educators are reluctant to adopt new teaching strategies unless they are sure they will succeed. Thus, continual support is more important than training. Teachers—especially novice ones—need experts at their side when something goes wrong. Educational leaders must emphasize how vital teamwork is in professional development. When anxious teachers get the support of their colleagues, they will feel less threatened. Collegiality, openness and trust among teachers and leaders are crucial for meaningful professional development to occur (Clement & Vandenberghe, 2001). Teachers who are hesitant when it comes to new professional development programs change their minds when their leaders give them incentives (Bush, 2005; McKenzie, 1999). Coaching and giving direct feedback and evaluation to participants is also crucial (Clement & Vandenberghe, 2001; Bush, 2005). The more recognition the administrators provide, the less reluctant the teachers feel (McKenzie, 1999).

According to Fulton and Riel (1999) and Sparks (2002), educational leaders should promote professional development through learning communities. A learning community is “group of people who share a common interest in a topic or area as well as a particular way of talking about the phenomena, tools, and sense-making approaches for building their collaborative knowledge with a set of common collective tasks” (Fulton & Riel, 1999, p. 519). Quality professional development that offers teachers time to collaborate with each other and update their information and skills has been identified by educators as a significant factor in school reform. Such professional staff development goes beyond in-service
training and generic face-to-face delivery models to a more flexible and ongoing engagement with other learned professionals. Learning communities allow educational leaders to involve teachers in school reform. Educators in learning communities can establish connections with experts inside and outside the school. They also receive pedagogical, emotional and technical support when they are in the process of professional growth (Fulton & Riel, 1999).

*Educational Leaders Promoting Online Professional Development*

“Online learning, in a good course, can be more immediate than some face-to-face instruction” (Wood, 2005, p. 34). Louie and Hargrave (2006) stated in the report they prepared for the Massachusetts Department of Education that achieving full technology integration and technology literacy for students and teachers requires educational leaders to be committed and highly motivated; however, the outcomes of such hard work are very rewarding. Superintendents’ and principals’ efforts tied to teachers’ expertise in providing technology-integrated instruction prepare students to better deal with our growing, challenging world. Ertmer et al. (2002) suggested that a strong infrastructure is needed for technology to be integrated into classroom instruction, and strong educational leaders are necessary to promote and sustain such integration. “The real information technology (IT) issues are not about products but rather are about the effective use of resources and the effective delivery of services—about how information technology aids and advances the institutional mission” (Green, 2006, p. 44).
Educational leaders have to make sure that they offer online professional development opportunities that help teachers engage their students in technology-based learning (Cole & Styron, 2005). According to Killion (2002), before implementing online professional development, educational leaders have to consider a number of aspects. They have to measure the effectiveness of online learning based on teacher practice and student results rather than on the number of participants or teacher preference for online over face-to-face staff development. Moreover, decision makers need to use the NSDC’s standards as a guide for quality online learning which should be part of a plan that contains a vision for online professional development, offers various learning opportunities to meet teachers’ needs, is based on student achievement, and is subjected to continuous evaluation. Leaders also need to make sure that the online professional development programs they want to implement offer substantial content related to the needs of their teachers and students and are aligned with the curriculum. Besides, educational supervisors should implement online professional development programs that have flexible contents. Content flexibility allows teachers to tailor online learning processes to their own needs (Killion, 2002).

Knowing that online learning programs can be accessed 24/7, educational leaders think that teachers have all the time flexibility they need. However, teacher learning in regular time- within teachers’ workdays- is vital for ongoing development to occur. Educators need not be isolated from the whole learning community when they are participating in any kind of professional development,
whether online or face-to-face. Therefore, teachers are to be given time at school to participate in online professional development programs. School and district leaders have to also keep in mind their teachers’ readiness to be online learners. Ongoing support and guidance motivate the educators and encourage them to be committed to their learning. Kleyn-Kennedy (2006) added that the educational leader has to not only encourage, but also facilitate teachers' use of technology. The more technology-based professional development they receive, the less intimidated they feel about integrating technology into their instruction. When teachers feel well-equipped, their self efficacy and self esteem will be boosted; this will lead them to incorporate technology into their instruction (Kleyn-Kennedy). Principals and superintendents have to give wings to their teachers and show them how they are maneuvered before they actually ask them to flap their wings and fly (Killion, 2002; Kleyn-Kennedy, 2006).

Decision makers have to acknowledge the importance of facilitators. Teachers who participate in online learning benefit greatly from the technology facilitator, especially if they are novice. Technical support is a must. School and district leaders should also consider the interactivity of the online professional development programs. Many educators drop out of online learning processes because they are not interactive and they lack direction and support. Educational leaders should implement online programs that contain immediate feedback, frequent assessment, and numerous assignments; these will give teachers all the direction and motivation they long for. Furthermore, educational leaders should provide teachers with suitable learning environments to access online learning.
resources. This increases educator’ efficiency. Finally, decision makers have to make sure that the online professional development programs they choose to implement are aligned with the districts’ and schools’ student learning goals and teachers’ performance expectations (Killion, 2002).

Challenges Educational Leaders Need to Consider When Implementing Quality Professional Development

Drago-Severson and Pinto (2003) noted that the educational leader’s ability to initiate and sustain quality professional staff development is highly affected by the school’s human resources- teachers, staff members and administrators and how they all function together. Decision makers have to keep the following challenges in mind when trying to implement a new professional development program. First, they should consider the challenge of time. It is not easy for principals to schedule professional development training during school days; teachers simply do not have the time for their own learning when they are in their classrooms all day long. The second challenge is resistance to change. Educational leaders have to help teachers understand the change process. They should give them ample support and guidance to help them walk through the unknown (Ertmer et al., 2002). The third challenge is the broadening of teachers’ perspectives. Teachers need to be aware of their assumptions. They need to see where they stand now and where they will be after participating in a quality professional development program. Educational leaders should help teachers widen their perspectives by providing continuous support and time for self-reflection. The fourth challenge is the need for process orientation. Principals
have to connect with their teachers by paying attention to their values, emotions, and feelings. To overcome these challenges, leaders need to understand the fears and concern that teachers possess. They should also alter teachers' daily schedules to allow for collaborative time for professional development (Drago-Severson & Pinto, 2003).

An additional challenge educational leaders have to be concerned with, according to Collins & Dewees (2001), is computer and Internet access. There is a rapid spread of Internet connectivity among public schools in the United States; nonetheless, imbalance of access continues to be a problem. In 1997, public schools with a majority of low income students- 71 percent of students were eligible for free or reduced lunch funds- were less likely to have internet access than public schools with a minority of low income students- 11 percent of students were eligible for free or reduced lunch funds. Moreover, public schools with a high percentage of minority students- 50 or more- had less Internet access than public schools with a low percentage of minority students- less than six percent (Collins & Dewees). Principals and district officials have to make sure that all teachers and students have access to computers that are connected to the Internet.

Principals and superintendents need to consider all of the aforementioned aspects before they implement a new staff development program. According to Anderson (2000), student performance and teacher professional development are highly correlated. The professional development environment has to be characterized with safety, open-mindedness, and support. Furthermore, the staff
development programs should be tailored to the specific needs of the educators and students for educational leaders to witness improvement in students’ as well as teachers’ performances. Educational leaders need to start by familiarizing themselves with the research. Any kind of professional development program they decide to implement in their schools has to be research-based. Careful planning, supportive leadership, and data driven decision making are all basic requirements for quality professional development to be attained (Killion, 2002).

Another important factor that educational leaders have to consider is the level of development their teachers and staff members are functioning at.

*Implementing Quality Professional Development Programs*

Engstrom and Danielson (2006) reported the results of a study that investigated teachers’ perceptions of how a particular school district implemented, sustained, and supported a professional development program that was led by teachers. The study was held in a small, rural district where teachers were considered exemplary. These teachers were asked to serve on the district’s Staff Development Committee (SDC). The school district partnered with the local university to implement the Arts Council grant. The purpose of the grant was to provide educators with professional development on Gardner’s Multiple Intelligence (MI) Theory.

Members of the SDC were the district’s curriculum director, a building principal, two teachers from each of the districts four schools, and a community member. The committee met on monthly basis. Committee members worked on designing, implementing, and assessing professional development programs,
one of which was based on Gardner’s MI theory. During the 3 semesters in which the one-credit hour seminar on Gardner’s MI theory was offered, 40% of the district’s educators registered for the course. Teachers were also given the chance to enroll in area workshops on MI theory.

Thirty educators were invited to participate in this qualitative study, but only eleven teachers did. These teachers were elementary, intermediate, and high school teachers. To gather data from the participants, SDC members used three qualitative data sets: a focused writing, an interview, and unit or lesson artifacts. The focused writing was used to show the concerns that the teachers had as they implemented the MI theory in their classes. The interview demonstrated the teachers’ understanding of what they did in their classes and why they did it. The artifacts presented evidence of how the teachers were implementing the MI theory in their classes (Engstrom & Danielson, 2006).

Engstrom and Danielson (2006) stated that the teachers who participated in the study stressed that collegiality among members at the district and building levels encouraged them to continue learning. Educators also stated that they were given ample opportunity to participate in various professional development programs that were led by the SDC. This gave the teachers ownership of their own learning. Participants in this study noted that the administrative support that existed across the district helped them greatly. This study showed that a connection has to exist between the district’s central office and the school buildings. Professional development is a process that should be done
collaboratively. Teachers, administrators, and district officials should work hand in hand for professional development to be successful.

Clement and Vandenbergh (2001) reported the results of a study that took place in two suburban Flemish elementary schools. The first school-Heathlandpool- served 438 students and the second- Writerscourt- had 280 pupils. The school leader of Heathlandpool had twelve years of experience as a principal, and the school leader of Writerscourt had only three. The purpose of the study was to test the effect of collegiality on professional development. The relationship between the principal and the teachers at Heathlandpool showed a richly diverse collegiality that did not deny teachers their autonomy. Teachers often told the principal about what was happening in their classrooms. They chatted in the corridors and during breaks. The principal encouraged teachers to come to her for advice. She was always willing to listen to teachers' ideas and concerns about students, curriculum, or instructional issues. On the other hand, the relationship between the principal and the teachers at Writerscourt elementary school was different. Educators felt that they could not share their opinions with their principal. He was viewed as a person who did not encourage collaboration. Collegiality between the school leader and the teachers was very minimal. Teachers at Writerscourt reported that the learning experience they got from their relationship with their principal was very scarce.

The results of this qualitative study proved that collegial interactions should exist between school leaders and their teachers for teacher education to occur. Quality professional development can not thrive in a "collegiality-free"
school environment. *Friendly communication* between principals and teachers is the key for producing learning opportunities that allow educators to prosper. Educational leaders' support is a vital element for high quality professional development to exist (Clement & Vandenberghe, 2001).

**Educational Leaders and the Digital Natives**

As Killion (2000) noted colleges, universities, and professional associations- nationwide- are increasing their use of online and web-based courses. Virtual universities- ones that offer undergraduate and graduate degrees that are fully online- are becoming commonplace around the world (Killion, 2000). This confirms that some people are more technology-oriented than others. “An essential component of facilitating learning is understanding learners” (Oblinger, 2003, p. 37). Today, educational leaders have to be conscious of the fact that not only their K-12 students, but also a number of their teachers are *Digital Natives*. *Digital Natives also referred to as Generation Y, Millennials, and Nexters* (people who were born after 1980) are different from *Boomers* (people who were born between 1943 and 1960) and *Gen-Xers or Generation X* (people who were born between 1960 and 1980) (Denham & Adbow, 2002; Oblinger, 2003; Wood, 2006; Zemke, 2001). They view technology as a natural part of their environment; they work more effectively in teams; and they are more Internet-savvy than previous generations (Oblinger). Weiler (2004) added that they are visual learners who prefer hands-on experiences that are directly related to their needs. Being vigilant to the unique learning demands of *Generation Y* students, educational leaders have to plan professional
development accordingly keeping in mind students and teachers who belong to this digital generation.

According to Clifford (2005), decision makers need to realize that students are already utilizing various digital technologies for work and leisure; and if educators are properly trained, they can direct them to use technology not only more responsibly, but also as an educational tool. Johnson (2004) explained that Generation Y students and teachers use technological devices such as, cell phones, handheld computers, and wireless laptops in their daily lives. Shreve (2005) stressed that even computer games "could help motivate students to understand things they couldn’t, or wouldn’t, learn before" (p. 30). “Schools need to learn to use these technologies to enhance educational experiences, not ignore or ban them. This generation will not be willing to leave their virtual lives at the school door” (Johnson, 2004, p. 8).

Summary

Whether teachers, administrators, or staff members are ready to accept this fact or not, technology (computer and the Internet) is a vital part of students’ everyday lives (Wang, 2000). Integrating technology not only in the classroom, but also in classroom instruction helps our students learn. Children today seem to be more comfortable with the use of technology than adults are (Oblinger, 2003). For teachers to effectively use the computer and the Internet as educational tools, they need to be well trained. Professional development that focuses on incorporating computers and the Internet into classroom instruction helps teachers keep up with today's rapidly changing world of technology.
Educators can benefit greatly from technology if they are given the proper training (Anderson, 2000). Thus, online professional development is no longer a luxury; it is a basic need that educational leaders have to make sure their teachers are not only provided with, but also well trained in.

This chapter showed various aspects of professional development. It shed light on the vitality of professional staff development for school success. The aims and purposes of staff development were also discussed. Moreover, different forms of staff development- traditional and online- were presented and specific programs were mentioned. The characteristics of effective professional development were thoroughly discussed to highlight their importance. The value, effectiveness, and advantages and disadvantages of online professional development were also explored. Furthermore, the role of educational leaders in providing staff development was emphasized. Educational leaders are capable of promoting quality professional development, which makes all the difference needed for school reform to occur. It is imperative for educational leaders to truly understand the needs of their K-12 teachers and students to provide effective professional development.

The following chapter will provide detailed information about the research design- the sample, instrumentation and data analysis- pertaining to this specific study.
CHAPTER III

METHODOLOGY

Research Overview

In this chapter, the researcher presents a detailed explanation of the research design followed by description of the sample. An explanation of the development and usage of the survey instrument are also presented. Further, the procedures that were followed throughout the research study and the analysis of the data are described.

The researcher gathered both quantitative and qualitative data for this comparative study. Mississippi K-12 teachers who reported they have participated in at least one professional development program were asked to fill out a survey instrument (questionnaire) designed specifically for this study (see Appendix A). The questionnaire included questions pertaining to the participants’ attitudes toward the training they received. They were asked about the importance and usefulness of the skills they learned in face-to-face and online training. They were also asked about the knowledge and benefit they derived. The participants’ responses were analyzed to determine if statistical differences existed in teachers’ attitudes toward online professional development as opposed to traditional face-to-face staff development.

The participants were also asked about the helpfulness of the instructor of the professional training they participated in. In addition, they were asked to rate the support, guidance, and feedback they have received. Those data were used to measure if statistical differences existed between teachers’ perceived level of
support for online professional development as opposed to traditional face-to-face professional development.

Moreover, the participants were asked questions about how comfortable they felt when integrating technology into their instruction. They were also asked about their use of the Internet as part of their teaching methodology and if they encouraged their students to use the Internet too. Teachers’ responses to these questions were explored to study their attitudes toward utilizing technology as an instructional tool in their classes after they have participated in at least one online professional development module. K-12 teachers from nine different public school districts in Mississippi were polled.

Sample

The researcher surveyed K-12 teachers in Mississippi based on the following factors: number of districts and the district location and size. Surveying teachers in only one district would not have yielded an adequate sample size. In addition, it would not have been a representation of districts across the state. Therefore, for the purposes of this specific study, nine districts were chosen. The researcher targeted teachers from districts which are located in the four quadrates (Northeast, Northwest, Southeast, and Southwest) of Mississippi to help ensure a sample likely to be representative of the entire state K-12 teacher population. Some districts were relatively small; others were considered large.

Out of the 1,000 surveyed teachers, 312 chose to fill out the survey instruments and return them to the researcher. The sample included male and female teachers of various ethnic backgrounds. Their ages were typical of K-12
classroom teachers; they ranged from 20 to over 60 years. The sample included novice teachers as well as veterans.

Instrumentation

The researcher developed a survey instrument (questionnaire) to be utilized for gathering the needed data for this specific study. The questionnaire was prepared with the help of a focus group. The researcher met with a panel of experts (K-12 teachers, administrators, and professional development coordinators) and asked them to assist in forming the new survey instrument. This instrument was designed to measure teachers' attitudes toward online professional development as opposed to traditional professional development. The questionnaire was also used to measure K-12 teachers' perceived support in traditional face-to-face professional training as compared to online training. In addition, the instrument measured teachers' attitudes toward utilizing technology in their classes as an instructional tool after participating in at least one online professional development module.

After several meetings with the group of experts, the researcher developed the final draft of the questionnaire (see Appendix A). The survey instrument contained demographic questions, 43 "Likert-type" scale items, and five open-ended questions. The panel of experts helped the researcher determine the construct and face validity of the questionnaire by examining the coherence, clarity, obviousness, and readability level of the items. Upon receiving permission from the Institutional Review Board (IRB) found in Appendix B, the researcher tested the reliability of the survey instrument in the pilot study.
The researcher had a sample of 25 K-12 teachers complete the questionnaire based on their experiences with professional development. Cronbach Alpha was used to measure internal consistency; its value was .94, indicating high reliability.

**Procedures**

Nine school district officials, professional development coordinators, and superintendents across the state of Mississippi were contacted. The researcher asked their permission to have their K-12 teachers complete the survey instrument. Some of these educational experts were contacted via the phone, while others were emailed. The researcher explained via the phone calls and the emails the importance of the study and the purpose behind it. The researcher also elucidated the significance of the questionnaire and the importance of it being completed by the teachers and returned on time. The researcher also asked each superintendent to sign a permission letter for data collection from each specific district (see Appendix C).

After the research project was approved by the IRB, the survey instruments were mailed. The researcher attached a letter to each questionnaire to encourage teachers to fill out the questionnaires and return them within two weeks (see Appendix D). The researcher also provided self-addressed envelopes so teachers could mail the survey instruments back. The researcher mailed the questionnaires to the superintendents who gave them to the principals. The principals then distributed them to the teachers. Participating teachers were asked questions related to their gender, age, years of experience, and computer knowledge. They were also asked about their attitudes toward
traditional face-to-face professional development and online professional development. Furthermore, teachers answered questions pertaining to their computer skills, technology integration, and the support they have received during professional training. After the questionnaires were returned to the researcher, data were gathered and analyzed.

Data Analysis

The researcher collected the data and used the 13th version of the Statistical Package for the Social Sciences- SPSS (Norusis, 2005) for data analysis. Both factor analysis (for determining the number of constructs being measured) and paired-samples t-tests were used to address the research questions that follow.

Research Question 1

Is there a statistically significant difference between K-12 teachers’ attitudes toward online professional development and their attitudes toward traditional face-to-face professional development?

Method of Data Analysis for Research Question 1. A paired-samples t-test was conducted. The factors “PD” and “OPD” were used as measures for teachers’ attitudes toward face-to-face professional development and online professional development respectively. The alpha value was set at .05.

Research Question 2

Is there a statistically significant difference between K-12 teachers’ perceived level of support in online professional development and their perceived level of support in traditional face-to-face professional development?
Method of Data Analysis for Research Question 2. A paired-samples t-test was conducted. The factors “SupportPD” and “SupportOPD” were used as measures for teachers’ attitudes toward the support they received in face-to-face professional development and the support they received in online professional development consecutively. The alpha value was set at .05.

Research Question 3

Is there a statistically significant difference between K-12 teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms before and their attitudes after participating in online professional training?

Method of Data Analysis for Research Question 3. A paired-samples t-test was conducted. The factors “TechBefore” and “TechAfter” were used as measures for teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms before participating in online professional training and utilizing technology as an instructional tool in their classrooms after participating in online professional training consecutively. The alpha value was set at .05.
CHAPTER IV
ANALYSIS OF DATA

Introduction

This chapter is dedicated to reporting the analysis of the data gathered in this research study. The researcher surveyed K-12 teachers who have participated in at least one professional development program to examine their attitudes toward online and face-to-face professional development. The study focused on K-12 teachers who teach in public schools in the state of Mississippi. Nine different school districts across the state were chosen for this study. Quantitative and qualitative data were gathered to determine if there was a statistically significant difference in teachers' attitudes toward online and face-to-face professional training. Teachers' attitudes toward the support they have received in online and face-to-face professional training and their attitudes toward utilizing technology in their classrooms were also measured.

Data Collection

A total of 1,000 questionnaires were mailed to nine districts' superintendents who delivered them to the principals of 31 public schools. The principals distributed the questionnaires to K-12 teachers. The teachers were invited to fill out the questionnaires and return them within two weeks. The questionnaires that were mailed back to the researcher within a period of four weeks were used in this specific study.
Description of Sample

The population for this research study consisted of 1,000 teachers who teach in nine public school districts in Mississippi. Out of the 1,000 surveyed, 312 completed the questionnaires and mailed them back to the researcher (31.2% response rate). Demographics are presented in Table 1. Out of the 312 teachers, only 101 reported having participated in at least one online professional development activity (32.4%). A graph of the sub-sample is presented (Figure 1).
Table 1

Demographic Characteristics of Sample (N=312)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>271</td>
<td>86.9%</td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>11.2%</td>
</tr>
<tr>
<td>(Missing)</td>
<td></td>
<td>1.9%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30 years</td>
<td>81</td>
<td>26.0%</td>
</tr>
<tr>
<td>31-40 years</td>
<td>75</td>
<td>24.0%</td>
</tr>
<tr>
<td>41-50 years</td>
<td>69</td>
<td>22.1%</td>
</tr>
<tr>
<td>51-60 years</td>
<td>72</td>
<td>23.1%</td>
</tr>
<tr>
<td>60+ years</td>
<td>10</td>
<td>3.2%</td>
</tr>
<tr>
<td>(Missing)</td>
<td></td>
<td>1.6%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>217</td>
<td>69.6%</td>
</tr>
<tr>
<td>Asian</td>
<td>5</td>
<td>1.6%</td>
</tr>
<tr>
<td>Black, African Descent</td>
<td>64</td>
<td>20.9%</td>
</tr>
<tr>
<td>Black, not African Descent</td>
<td>17</td>
<td>5.6%</td>
</tr>
<tr>
<td>Native American</td>
<td>2</td>
<td>.7%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>(Missing)</td>
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<td>1.3%</td>
</tr>
<tr>
<td>Grade Level Taught</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-3</td>
<td>96</td>
<td>30.8%</td>
</tr>
<tr>
<td>4-5</td>
<td>43</td>
<td>13.8%</td>
</tr>
<tr>
<td>6-8</td>
<td>85</td>
<td>27.2%</td>
</tr>
<tr>
<td>K-8</td>
<td>15</td>
<td>4.8%</td>
</tr>
<tr>
<td>6-12</td>
<td>3</td>
<td>1.0%</td>
</tr>
<tr>
<td>9-12</td>
<td>59</td>
<td>18.9%</td>
</tr>
<tr>
<td>(Missing)</td>
<td></td>
<td>3.5%</td>
</tr>
</tbody>
</table>
Figure 1. Teacher Participation in Online Professional Development (OPD).

Data Preparation

Before gathering data, the researcher established the validity and reliability of the research instrument based on the input provided by the panel of experts in the focus group and the Cronbach Alpha value of the pilot study. After the data was gathered, the researcher rechecked the validity and reliability of the
survey instrument by using factor analysis and Cronbach Alpha. Prior to the analyses, all items related to professional development (Q17- Q55) were factor analyzed using exploratory factor analysis (PCA Varimax Rotation) to verify that specific items correlated to each other and measured a specific construct which allowed conclusions regarding the validity of the instrument. The rotated solution confirmed that there were six factors, which together accounted for 78.07% of the variance: PD, OPD, SupportPD, SupportOPD, TechBefore, and TechAfter. The breakdown of items into factors and the factor loadings are shown in Table 2. Only 2 items (Q17 & Q18) were removed because they double loaded. Subsequent analyses used the six factors as dependent variables.
### Table 2

**Factor Loadings**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item Description</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PD</strong></td>
<td>Satisfaction with district’s current PD program</td>
<td>*</td>
</tr>
<tr>
<td>Q19</td>
<td>Importance of PDA</td>
<td>.791</td>
</tr>
<tr>
<td>Q23</td>
<td>Usefulness of PDA</td>
<td>.825</td>
</tr>
<tr>
<td>Q24</td>
<td>Benefit received from PDA</td>
<td>.801</td>
</tr>
<tr>
<td>Q25</td>
<td>Knowledge received from PDA</td>
<td>.854</td>
</tr>
<tr>
<td>Q26</td>
<td>Confidence in skills learned in PDA</td>
<td>.841</td>
</tr>
<tr>
<td>Q27</td>
<td>Usability of skills after PDA</td>
<td>.848</td>
</tr>
<tr>
<td>Q28</td>
<td>Helpfulness of instructor of PDA</td>
<td>.793</td>
</tr>
<tr>
<td>Q29</td>
<td>Feedback received during PDA</td>
<td>.804</td>
</tr>
<tr>
<td>Q30</td>
<td>Feedback received after PDA</td>
<td>.619</td>
</tr>
<tr>
<td>Q31</td>
<td>Support &amp; guidance received during PDA</td>
<td>.876</td>
</tr>
</tbody>
</table>

**OPD**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q39</td>
<td>Importance of OPDA</td>
<td>.822</td>
</tr>
<tr>
<td>Q40</td>
<td>Usefulness of OPDA</td>
<td>.809</td>
</tr>
<tr>
<td>Q41</td>
<td>Benefit received from OPDA</td>
<td>.780</td>
</tr>
<tr>
<td>Q42</td>
<td>Knowledge received from OPDA</td>
<td>.765</td>
</tr>
<tr>
<td>Q43</td>
<td>Confidence in skills learned in OPDA</td>
<td>.723</td>
</tr>
<tr>
<td>Q54</td>
<td>Usability of skills after OPDA</td>
<td>*</td>
</tr>
<tr>
<td>Q55</td>
<td>Satisfaction with district’s current OPD program</td>
<td>*</td>
</tr>
</tbody>
</table>

**SupportPD**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q28</td>
<td>Helpfulness of instructor of PDA</td>
<td>.793</td>
</tr>
<tr>
<td>Q29</td>
<td>Feedback received during PDA</td>
<td>.804</td>
</tr>
<tr>
<td>Q30</td>
<td>Feedback received after PDA</td>
<td>.619</td>
</tr>
<tr>
<td>Q31</td>
<td>Support &amp; guidance received during PDA</td>
<td>.876</td>
</tr>
</tbody>
</table>
Table 2 (continued).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Description</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SupportOPD</td>
<td>Q44</td>
<td>Helpfulness of instructor of OPDA</td>
<td>.738</td>
</tr>
<tr>
<td></td>
<td>Q45</td>
<td>Feedback received during OPDA</td>
<td>.811</td>
</tr>
<tr>
<td></td>
<td>Q46</td>
<td>Feedback received after OPDA</td>
<td>.805</td>
</tr>
<tr>
<td></td>
<td>Q47</td>
<td>Support &amp; guidance received during OPDA</td>
<td>.774</td>
</tr>
<tr>
<td>TechBefore</td>
<td>Q48</td>
<td>Integrating technology into instruction before OPDA</td>
<td>.745</td>
</tr>
<tr>
<td></td>
<td>Q50</td>
<td>Use of Internet in teaching method before OPDA</td>
<td>.442</td>
</tr>
<tr>
<td></td>
<td>Q52</td>
<td>Number of assignments using Internet before OPDA</td>
<td>.855</td>
</tr>
<tr>
<td>TechAfter</td>
<td>Q49</td>
<td>Integrating technology into instruction after OPDA</td>
<td>.621</td>
</tr>
<tr>
<td></td>
<td>Q51</td>
<td>Use of Internet in teaching method after OPDA</td>
<td>.638</td>
</tr>
<tr>
<td></td>
<td>Q53</td>
<td>Number of assignments using Internet after OPDA</td>
<td>*</td>
</tr>
</tbody>
</table>

* These items were included in the factors above although their factor loadings were higher on other factors (not shown).
The original intent of the researcher was to develop a questionnaire that would specifically measure variables as they relate to the research questions presented in this study. Based on that, the researcher decided that four items (Q19, Q53, Q54, & Q55) would be parts of certain factors (see Table 2) although their factor loadings indicated otherwise. This strategy is justified by the high Cronbach Alpha statistics reported once the items were moved to other factors (see Table 3).

To establish reliability, an internal consistency estimate of reliability was measured using the Cronbach Alpha. The variables used to determine reliability of the survey instrument are reported in Appendix F. The researcher also tested each of the six factors for reliability. The Cronbach Alpha statistics of these factors were all larger than .70 indicating satisfactory reliability. Cronbach Alpha values of all factors are reported in Table 3.

Table 3

Summary of the Cronbach Alpha Statistics of the Six Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD</td>
<td>7</td>
<td>.83</td>
</tr>
<tr>
<td>OPD</td>
<td>7</td>
<td>.91</td>
</tr>
<tr>
<td>SupportPD</td>
<td>4</td>
<td>.93</td>
</tr>
<tr>
<td>SupportOPD</td>
<td>4</td>
<td>.93</td>
</tr>
<tr>
<td>TechBefore</td>
<td>3</td>
<td>.77</td>
</tr>
<tr>
<td>TechAfter</td>
<td>3</td>
<td>.81</td>
</tr>
</tbody>
</table>
The participants who indicated that they had participated in online professional development (N=101) were also asked a question regarding whether they preferred online or face-to-face training. Out of the 101 teachers, 65 said they preferred face-to-face training, 30 reported they preferred online training, and 5 had no preference (see Figure 2).

![Figure 2. Teachers' Preference for Professional Development](image-url)

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When asked if they would consider participating in additional online professional development activities, 78 teachers said yes and 22 teachers said no (see Figure 3). These two questions were followed by the opportunity for teachers to elaborate by answering four open-ended questions.

Figure 3. Teachers' Willingness to Participate in More Online Professional Training.
When reporting the suggestions teachers gave on how to improve online professional development, the researcher found four themes: instruction, the instructor, teacher involvement and relevance, and variety. Teacher involvement and relevance-related issues (N=25) were more frequently mentioned than others. Participants suggested that teachers should be actively involved in the planning of online professional development, and that it should be relevant, useful and based on teachers' needs. The issues related to instruction (N=15) showed that teachers needed the online activities to be shorter and simpler. They also suggested that they should be given more time at school for online training. The issues related to the instructor (N=7) suggested that more feedback and easier access to the instructor were needed. Moreover, the issues related to variety (N=7) showed that teachers suggested that more online workshops and a wider variety of online activities should be provided.

When reporting which aspects of online professional development proved to be most effective to the participants, the researcher found three themes: convenience, interactivity, and construct. Interactivity related issues (N=12) were more frequently mentioned than others. Teachers reported that the live chatting, live discussions, conference calls, and visuals helped them interact with the instructor and other teachers. This aspect proved helpful to some participants. The themes related to convenience (N=9) showed that teachers reported the effectiveness of working at one's own pace without any time frames. They also reported that access and availability of online activities were two characteristics that made them look forward to participating in more online professional training.
Furthermore, the issues related to the construct (N=8) showed that the way the online professional development activities were structured had an effect on their value. The participants reported that they found outcome-based activities and technology training workshops to be very helpful. They also reported the value of activities that provided useful teaching strategies.

When reporting which aspects of online professional development proved to be least effective to the participants, the researcher found three themes: feedback and support, hands-on, and difficulties. The feedback and support-related issues (N=10) were more frequently mentioned than others. Teachers stated that the online learning they participated lacked sufficient feedback. They did not receive all the help and support they needed throughout their online training. The hands-on-related issues (N=8) reflected teachers' need for more interactive activities. Teachers reported that the lack of hands-on activities and visuals was a drawback of the online training they received. They thought such interactive activities and visuals should replace the lengthy chats they participated in. The difficulty related issues (N=7) showed that some participants found unclear directions, difficult tests, hard materials, and technical difficulties to be aspects that hindered their learning. In addition, they reported that limited access to computers and the Internet at their schools caused problems, too.

When asked if professional development could be done solely online, 14 teachers said yes, and 77 said no. When reporting qualitative data, the researcher found two themes for the teachers who said yes: convenience and accessibility and training and two themes for those who said no: teachers' needs
and face-to-face components. For the teachers who affirmed that professional development could be done solely online, the convenience and accessibility related issues (N=9) were more frequently mentioned than others. Some participants believed that online professional training could substitute for face-to-face staff development because online activities save time. They also reported that all public schools have computers and Internet access which makes it easy for a large number of teachers to be trained at the same time. The training related issues (N=4) showed that some participants believed that with the proper training and support all teachers could benefit from online professional development. For the teachers who thought professional development should be a mixture of online and face-to-face training, the face-to-face component related issues (N=57) were the most frequently mentioned. The majority of the participants believed that a face-to-face component should accompany online professional training for learning to take place. Teachers reported the need for human interaction, instant feedback, active participation, hands-on activities, and visuals. The issues related to teachers' needs (N=14) showed that some participants believed that online learning does not suit all teachers. A mixture of face-to-face is needed to meet the needs of individual teachers.

A summary of the qualitative data collected from these questions is reported in Appendix E.

Analysis of Research Questions

The researcher based this study on three research questions related to K-12 teachers' attitudes toward professional development. The first question
measured teachers’ attitudes toward online and face-to-face professional training. The second question measured the perceived support teachers received during and after online and face-to-face professional development. The third question measured teachers’ attitudes toward utilizing technology as an instructional tool in their classes after participating in online professional training.

**Research Question 1**

Is there a statistically significant difference between K-12 teachers’ attitudes toward online professional development and their attitudes toward traditional face-to-face professional development?

*Procedures and Results*

The teachers were asked several questions related to their attitudes toward online and face-to-face professional development. The researcher combined several items based on the factor analysis and used the factor “PD” and the factor “OPD” to address this question. The factors are identified in Table 2.

A paired-samples t-test was conducted to determine if a statistically significant difference existed between K-12 teachers’ attitudes toward online professional development and their attitudes toward face-to-face professional development. For the purpose of this analysis, all the items comprising the factor “PD” were summed to use as a measure of teachers’ attitudes toward face-to-face professional development, whereas all the items comprising the factor “OPD” were summed to use as the measure of teachers’ attitudes toward online professional development. A statistically significant difference was found $t(1,90)=$
The mean of teachers' attitudes toward face-to-face professional development was statistically significantly more positive than the mean of teachers' attitudes toward online professional development. The means and standard deviations are reported in Table 4.

Table 4

Summary of Means and Standard Deviations for the Three Research Questions

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>3.50</td>
<td>.72</td>
<td>101</td>
</tr>
<tr>
<td>OPD</td>
<td>3.30</td>
<td>.77</td>
<td>101</td>
</tr>
<tr>
<td>Research Question 2</td>
<td>3.38</td>
<td>.69</td>
<td>99</td>
</tr>
<tr>
<td>SupportPD</td>
<td>3.07</td>
<td>.88</td>
<td>99</td>
</tr>
<tr>
<td>SupportOPD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question 3</td>
<td>2.98</td>
<td>.87</td>
<td>101</td>
</tr>
<tr>
<td>TechBefore</td>
<td>3.21</td>
<td>.86</td>
<td>101</td>
</tr>
<tr>
<td>TechAfter</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question 2

Is there a statistically significant difference between K-12 teachers' perceived level of support in online professional development and their perceived level of support in traditional face-to-face professional development?
Procedures and Results

The teachers were asked several questions related to their level of perceived support in online professional development as opposed to traditional professional development. The researcher combined several items based on the factor analysis and used the factor “SupportPD” and the factor “SupportOPD” to address this question. The factors are identified in Table 2.

A paired-samples t-test was conducted to determine if there was a statistically significant difference between K-12 teachers’ level of perceived support in online professional development and their level of perceived support in face-to-face professional development. For the purpose of this analysis, all the items comprising the factor “SupportPD” were summed to use as a measure of teachers’ level of perceived support in face-to-face professional development, whereas all the items comprising the factor “SupportOPD” were summed to use as the measure of teachers’ level of perceived support in online professional development. A statistically significant difference was found $t(1,95)= 3.43, p=.001$. The mean of teachers’ level of perceived support in face-to-face professional development was statistically significantly higher than the mean of teachers’ level of perceived support in online professional development (Table 4).

Research Question 3

Is there a statistically significant difference between K-12 teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms before and their attitudes after participating in online professional training?
Procedures and Results

The teachers were asked several questions related to their attitudes toward utilizing technology as an instructional tool in their classrooms before as opposed to after participating in online professional training. The researcher combined several items based on the factor analysis and used the factor “TechBefore” and the factor “TechAfter” to address this question. The factors are identified in Table 2.

A paired-samples t-test was conducted to determine if a statistically significant difference existed between K-12 teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms before participating in online professional training and their attitudes toward utilizing technology as an instructional tool in their classrooms after participating in online professional training. For the purpose of this analysis, all the items comprising the factor “TechBefore” were summed to use as a measure of teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms before participating in online professional training, whereas all the items comprising the factor “TechAfter” were summed to use as the measure of teachers’ attitudes toward utilizing technology as an instructional tool in their classrooms after participating in online professional training. A statistically significant difference was found $t(1,95)= -4.28, p=.001$. The mean of teachers’ reported comfort and use of technology as an instructional tool in their classrooms after participating in online professional training was statistically significantly higher than the mean of
teachers' reported comfort and use of technology as an instructional tool in their classrooms before participating in online professional training (Table 4).

It might be noted that for this specific study, the researcher chose to run the three paired-samples t-tests using the sums of the items within factors rather than the means. Whereas this strategy may in some cases influence outcomes, in this specific study, analyses using means resulted in identical outcomes of significant difference for all three research questions.

Summary of Findings

The results of Research Question 1 showed that teachers' attitudes toward face-to-face professional development were statistically significantly more positive than their attitudes toward online professional development. The results of Research Question 2 showed that the teachers' level of perceived support in online professional training was statistically significantly lower than their level of perceived support in face-to-face training. The results of Research Question 3 showed that teachers' attitudes towards utilizing technology as an instructional tool in their classes after participating in online professional development was statistically significantly more positive than their attitudes before participating in online professional development. In summary, all three statistical tests concluded that statistically significant differences existed.

Ancillary Findings

After analyzing the collected data, the researcher came to the realization that some findings- although unexpected- were worth mentioning. Based on the data, there was a notable difference between teachers' satisfaction with their
districts' professional development programs and their districts' online professional development programs. Teachers were more satisfied with the face-to-face training than the online training they received (Figure 4).

Figure 4. Teachers' Satisfaction with Their Districts' Professional Development (PD) and Online Professional Development (OPD) Programs.
The data also indicated that teacher involvement in the planning of professional development was not high. Out of the 312 surveyed teachers, 42 reported that they were *not* involved in the planning of professional development (see Figure 5).

*Figure 5. Teacher Involvement in the Planning of Professional Development (PD)*
Their choice in the type of professional development they received was also limited. Out of the 312 surveyed teachers, 54 said that they did not have any choice in the professional training they received (see Figure 6).

Figure 6. How Much Choice Teachers Have in the Professional Development (PD) They Receive
Another interesting finding was how teachers rated the impact of the professional development they received on their students' achievement. The majority of surveyed teachers (149) reported that the impact of the professional development they received on their students' achievement was moderate (see Figure 7).

![Graph showing the impact of professional development on student achievement](image)

**Figure 7.** Impact of Professional Development on Student Achievement

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Moreover, the data showed that teachers believed that integrating technology into instruction was of high value. Out of the 312 surveyed teachers, 133 reported that it was high, and 61 said that it was very high (Figure 8). A discussion of all findings will follow in Chapter 5.

*Figure 8. The Value of Technology Integration into Instruction*
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

A discussion of the rationale of this specific study and its findings are presented in this chapter; ancillary findings are also interpreted. Further, limitations of the research study are reported. Recommendations for practice and further research as well as implications for educational leaders are also suggested. The researcher's personal comments on some aspects of the study are stated in the reflections section.

Purpose of the Study

This research study was intended to explore the value of face-to-face and online professional development from the perspective of K-12 teachers. It was also done to show the value of support teachers received during their professional learning as well as the value of online professional training as it relates to technology integration into classroom instruction. The results of this specific study could help educational leaders better plan and implement professional development. The data also had the potential to indicate if a need for online professional development existed.

Summary of Procedures

The researcher developed a questionnaire to be used as the survey instrument in this specific study. The questionnaire contained demographic questions, 43 “Likert-type” scale items, and five open-ended questions. The survey instrument, which was based on focus group discussions and was pilot-
tested, was developed to assess teachers' attitudes toward staff development, technology integration, and online professional leaning. Once the nine superintendents' signatures were obtained and the Institutional Review Board's approval was granted, the questionnaires were mailed to the district offices. The superintendents delivered the survey instruments to school principals who then distributed them to individual teachers. The teachers were encouraged to fill out the questionnaires and mail them back to the researcher in two weeks. All the survey instruments that were gathered within the period of four weeks were included in this study. Out of the 1,000 targeted teachers, 312 (31.2%) filled out the questionnaires and mailed them back to the researcher. When all the data were collected, the researcher analyzed them and reported the findings.

Limitations

The process of mailing out the survey instruments and getting them back took more time than the researcher expected, thus the period of waiting for the data to be gathered was extended from two weeks to four. Another limitation was the fact that not all targeted teachers, only about one third, had participated in at least one online professional development program. The researcher expected at least half the teachers to have experienced online training. Many of the participants stated that they did not have any experience with online training because they may not have understood exactly what the researcher meant by online professional development. Thus, several teachers might have actually experienced online professional training but did not report that they did.
Summary of Major Findings

Three research questions were studied to examine teachers' attitudes toward online and face-to-face professional development. Each research question and its findings are presented in this section.

Research Question 1 explored K-12 teachers' attitudes toward professional development. It measured the knowledge and benefit they received from online as well as traditional face-to-face professional training. It also measured the importance and usefulness of both kinds of training. In addition, it measured teachers' confidence of the skills they learned in face-to-face and online professional development. The results suggested that there was a statistically significant difference in teachers' attitudes toward face-to-face and online training. The data reported from teachers reflected that they benefited more from face-to-face training and that they thought it was more important than online training. The data also indicated that teachers were more confident in the skills they learned in face-to-face training than the skills they learned in online training (see frequencies and percentages in Appendix F).

Research Question 2 explored the support teachers received in traditional face-to-face staff development and in online professional development. It measured the feedback teachers were given during and after their participation in the professional development activities. It also measured how helpful the instructor was, as well as the amount of guidance the instructor supplied. The results showed that a statistically significant difference existed between the support teachers received in face-to-face training as compared to online training.
Teachers were given more feedback and help from face-to-face instructors. Their leaders provided more guidance and support during traditional face-to-face staff development than during online training (see frequencies and percentages in Appendix F).

Research Question 3 explored teachers' reported attitudes toward integrating technology into their instruction before as opposed to after their participation in online training. It measured teachers' comfort level and reported use of technology in their instruction before and after participating in online professional development activities. It also measured the amount of assignments teachers gave directing students to use the Internet before as opposed to after participating in online training. The results suggested that there was a significant difference between teachers' attitudes toward utilizing technology as an instructional tool before as opposed to after participating in online training. The data showed that teachers were more comfortable in integrating technology into their instruction after they participated in online professional development. The results also reported that teachers' use of technology in their teaching methods and the assignments they gave directing students to use technology increased after their participation in online training (see frequencies and percentages in Appendix F).

Discussion

What the results of the three research questions meant, how they might be interpreted, and whether they supported or contradicted the pertinent literature are discussed in this section. For Research Question 1, the difference
the researcher found between teachers’ attitudes toward online professional training and their attitudes toward face-to-face staff development was a statistical difference rather than a meaningful, practical one. While the majority of the teachers reported that online and face-to-face training were highly useful and important, the rest of the teachers had a moderate attitude. Educational leaders and decision makers might have failed those teachers in providing meaningful, effective staff development. Holland (2005) explained that educational leaders have to ensure that the professional learning teachers receive is aligned with their everyday experiences. Despite the statistically higher rating for face-to-face professional development, it is important to note that the surveyed teachers in this study considered online training beneficial, too. The data indicated that the majority of the surveyed teachers rated the benefit and degree of knowledge they received in online training as high.

Although the difference between teachers’ attitudes toward face-to-face staff development and their attitudes toward online training was not meaningful, it might be the case because the majority of the surveyed teachers were digital immigrants. These teachers are not as comfortable with technology as teachers who are born after 1980. The difference found in Research Question 1 might also be due to the fact that teachers received much more support, guidance, follow-up and feedback in face-to-face professional training than they did in online professional training. The amount of encouragement, support, and feedback teachers received in face-to-face training affected their attitudes toward it positively. These findings were consistent with the literature. Salpeter (2003)
reported that teachers consider professional development to be effective when it involves follow-up and support. These findings also indicated that instructors and educational leaders tend to provide more encouragement, follow-up, and feedback to teachers during and after traditional face-to-face staff development than they do during and after online professional development. If educational leaders fail to realize how important online professional training is, then they are not likely to provide their teachers with ample support. This may then influence the teachers' confidence levels and may affect their attitudes toward online professional development negatively. Educational leaders play a major role in teachers' staff development. An integral part of this role is one of guidance and support (Drago-Severson, 2002; Haar, 2001). Further, educational leaders are role models who can hinder or boost their teachers' professional learning.

Additionally, the data suggested that there was a direct positive correlation between teachers' online professional development and their attitudes toward using technology in class; the more they participated in online professional training, the more they integrated technology into their instruction, and the more they encouraged their students to use technology as a learning tool. These findings are consistent with the literature; for example, the results of a study that took place in Alabama indicated that online professional development made a difference in teachers' use of technology (Bush, 2005). Likewise, Collins and Dewees (2001) also reported that online professional development had a positive effect on technology integration into classroom instruction.
Qualitative Findings and Discussion

In answering the open-ended questions, the participants provided some clarifications and explanations regarding their attitudes toward online professional development. The majority of teachers—regardless of their preference—reported that they were willing to participate in more online professional development training. The data indicated that most teachers liked face-to-face professional development and thought it was beneficial, useful, and important. When teachers were involved in high-quality professional development, they believed it was valuable. This is supported by other research, such as, Haar (2001) who stated that teachers benefit greatly from professional staff development when it is of high quality.

Most teachers preferred face-to-face staff development to online training, and age could have been a factor that affected their attitudes. The majority of participants were 31 years old or older (see Table 1); they did not belong to the digital generation. Participants who belonged to the first age group category (20-30 years) were mostly digital natives. They were more tech-savvy than the rest of the participants. This is supported by the literature; Saltpeter (2003) and Oblinger (2003) stated that age makes a difference. Not only students, but also teachers who are born after 1980 learn best when technology is utilized in the learning process.

Regardless of their preferences, teachers were clear in expressing their need for online professional training. This is consistent with what Cole and Styron (2005) found. They reported that teachers needed “professional development
geared toward new technology” (p. 4). Those data also suggested that some teachers might have had some negative experiences in the past online activities they participated in, but they agreed with the need to keep learning online because of its convenience.

When asked about ways to improve online professional training, about half of the participants did not have suggestions. The teachers who gave suggestions stressed the need for more support and feedback. They explained that the online training they received lacked direct feedback which hindered their learning process. They also did not receive the ample support they needed either from their instructors or from their educational leaders. The literature summarized in this study supports these findings. Dickenson et al. (2003) stressed that the lack of support and guidance is one of the reasons professional training might be ineffective.

Moreover, participants in this specific study reported that they needed more time at school for their online training. This is consistent with the literature; Killion (2002) stated that teachers should be given time at school to participate in online professional development programs. In addition, some teachers suggested the need for a wider variety of online professional development programs. This could be interpreted as the districts' failure in providing a variety of online programs that target the needs of all K-12 teachers. These findings are supported by the literature summarized in this research study. Killion stressed that online professional development programs should offer substantial content related to the needs of the teachers and the students.
When asked about the aspects of online training participants found to be most effective, some teachers stated that they valued how convenient it was. The pertinent literature supports that finding. Online professional development is convenient in that it can be done anytime anyplace (Barkley & Bianco, 2002; Killion, 2000; McKenzie, 1998). Other teachers liked the fact that they could work at their own pace. Several studies have reported similar conclusions that online professional development allows teachers the freedom to learn at their own pace (Barkley & Bianco, 2002; Killion, 2000; McKenzie, 1998). The data also suggested that some participants found that interactivity of online training was very helpful. Research by Killion and Oelrich (2001) supports this finding; they stated that when teachers participate in online professional training, they can interact and learn from teachers at schools around the nation. Furthermore, Adsit (2004) reported that online training diminishes teacher seclusion and increases collegiality.

When asked about the aspects of online training that proved to be least effective, some participants referred to the lack of support and feedback. As mentioned earlier, this finding is supported in more than one instance in the literature. Other teachers stated that the lack of hands-on activities was one of the aspects that hindered their learning. This is supported by other research; as Killion (2002) reported, many teachers drop out of online training because of its lack of interactivity.

In addition, when asked if professional development could be done solely online, most teachers had negative replies. The majority of the teachers who
answered this open-ended question agreed that professional development should be a combination of face-to-face and online training. This is supported by studies by Zenger and Uehlein (2001) and Burke (1994) who agree that staff development should be a mixture of both face-to-face and online professional training.

Ancillary Findings and Discussion

A discussion of some unexpected findings that were worth mentioning is presented in this section. The data suggested that a notable difference existed between teachers' satisfaction with their districts' professional development programs and their districts' online professional development programs. Teachers reported that they were more satisfied with the traditional face-to-face training they received than the online training they received. These results might suggest that the face-to-face staff development teachers received better reflected their individual needs more so than the online professional training. Salpeter (2003) affirmed that while staff development should focus on the real needs of teachers and students, online professional training should focus on the real uses of technology. Teachers might be more satisfied with online professional development if it addressed their needs.

The data also indicated that teacher involvement in the planning of professional development was limited. Their choice in the type of professional development they received was also minimal. The researcher found those specific findings to be intriguing because they might be the reasons behind teachers' attitudes toward their professional learning. For teachers to be content
with their own professional learning, they should be actively involved in its preparation and implementation. These findings are consistent with the literature. When teachers have more control over the type, planning and implementation of the professional development they receive, they are more satisfied with it (Linek et al., 2003). Dickenson et al. (2003) also reported that teacher input is a central factor for effective professional development. Moreover, the research findings of Barnett (2004) indicated that teachers thought the professional development they received was effective because they were actively involved in its planning, implementation, and evaluation.

The data suggested that teachers did not really see the connection between professional development and student achievement. This is not consistent with the literature. Linek et al. (2003) indicated that professional development is an effective way to enhance student achievement. However, the findings of this specific research study could also be interpreted from another angle. If the professional development teachers participated in was not effective, then its impact on student performance would not be very evident. This is consistent with the literature; as Berry, Hoke, and Hirsch (2004) and Reid (2002) affirmed that student achievement is highly affected by teacher professional learning; the more effective professional development is the greater impact it has on student achievement.

Teachers should have a choice in whether they want to participate in online professional training and, if they do, they should be able to choose the kind of online learning they feel more comfortable with. Johnson et al. (2001)
reported that teachers are either positively or negatively affected by the professional training they receive. According to NPEAT (1999), teachers should be able to identify what they want to learn and what kind of experiences they want to engage in. Moreover, the data showed that teachers believed that integrating technology into instruction was of high value. This is supported by what Cole and Styron (2005) found. The data also indicated that K-12 teachers not only understand the value of utilizing technology in their instruction, but are also willing to do it. For them to be able to do so, they should be well trained. Collins and Dewees (2001) stated that online professional development provides such training and helps teachers utilize technology into their classes.

Recommendations for Policy and Practice

The data from this particular study indicated that K-12 teachers knew the value of professional development. They benefited from the face-to-face training they received. The findings also suggested that a lot of teachers valued online professional training and were willing to participate in more online activities. Further, the data indicated that the majority of teachers integrated more technology into their instruction after participating in online professional development. The results also suggested to professional development coordinators the need for providing a wider variety of online professional development activities. In addition, the data indicated that more teachers would be willing to participate in online professional if it were relevant and directly related to their needs. Professional development coordinators should also make sure that online instructors provide ample feedback to teachers during and after
online training. Moreover, the data were clear in suggesting that there was a need for professional development coordinators to involve teachers in the planning and implementation of the online professional development programs. This study indicated that the more choice teachers have in the professional development they receive, the more satisfied they will be, thus, the more likely they and their students will benefit.

Implications for the Educational Leader

A poem by the French poet Guillaume Apollinaire illustrates how educational leaders should promote professional staff development; it reads:

**COME TO THE EDGE**

"Come to the edge," he said.

They said, "We are afraid."

"Come to the edge," he said.

They came.

He pushed them.

And they flew. (Kleyn-Kennedy, 2006, p. 2)

The data and findings presented in this particular study could be of considerable use to principals, superintendents, and staff development coordinators. Educational leaders could use the information gathered and analyzed in this study to improve professional development programs at their own educational institutions. The results of this study suggest the need for principals to dedicate time during the school day for teachers to participate in online professional development. Surveyed teachers said that they liked online
training because of its convenience; nonetheless, they reported that they needed more time at school to participate in online learning. The most plausible reason for that request is that a lot of teachers may not have access to computers and the Internet at their homes. Therefore, educational leaders should provide teachers with greater access to their technology and give them the chance to do their online training at school.

Further, the information gathered in this study suggested that for professional development (online and face-to-face) to have a positive impact on student achievement it has to be of high quality. The data also indicated that the more involved teachers are in their professional training the more effective it is. Therefore, educational leaders have to connect with K-12 teachers and pay a close attention to their needs. Teachers need to be assured that their input regarding professional training is valued. Principals and superintendents should acknowledge that teacher involvement would lead to high-quality, effective staff development which would lead to greater improvements in student achievement.

The data collected and analyzed in this research study could also be used to reflect the value of face-to-face professional development. Decision makers have to keep in mind that even though some teachers like online training, others favor traditional face-to-face staff development and feel strongly about it. The majority of surveyed teachers believed that professional development should be a combination of face-to-face and online learning. High-quality professional development should address the needs of these teachers as well. Therefore, principals and superintendents could utilize the data gathered in this study and
present their teachers with professional development training that includes face-to-face and online components.

Based on the data collected in this particular study, educational leaders need to offer a variety of online training experiences that enrich teachers' technology-based backgrounds, empower them to utilize technology in their instruction, and help them encourage students to use technology as a learning tool. Therefore, educational leaders have to ensure that not only their teachers, but also their students are utilizing technology for academic purposes.

The results of the study also indicated that some teachers not only preferred online training, but also were willing to be trained solely online. Educational leaders need to be conscious of the individual teachers who are Digital Natives. Although such teachers were a minority in this particular study, they did exist. Principals and superintendents have to make sure that the professional development programs they implement cater to the needs of the Digital Native teachers and students. Digital Natives, as mentioned in Chapters 1 and 2, are people who were born after 1980. They rely primarily on their visual sense when collecting data, and they learn best when technology is implemented into their learning activities (Oblinger, 2003).

"Our students today are all ‘native speakers’ of the digital language of computers, video games, and the Internet." (Prensky, 2001, p. 1). By implementing online professional training, educational leaders are not only giving Digital Native teachers exactly what they need, but they are also supplying Digital Immigrant teachers (born before 1980) with the equipment and tools they need to
connect to their Digital Native students. Today, technology is no longer a fancy tool that is only used by a few; it is an essential component of students' everyday life. "Digital tools are like extensions to students' brains." (Prensky, 2006, p. 11).

Decision makers have to consider these aforementioned statements when planning effective, meaningful professional development activities.

Recommendations for Future Research

This study targeted K-12 teachers in nine public school districts in a southeastern state. More research studies could be conducted in all the districts in the state or even across the nation because online professional training is taking place in all fifty states. The number of participants that formed the sample size was relatively small; other research studies could be conducted with bigger samples. The findings of this particular study lead to the following recommendations for future research:

- A mixed-design study of teachers' attitudes toward face-to-face and online professional development controlling for age and other factors should be conducted to examine the effects age and other factors have on how teachers perceive their professional training.

- A qualitative study of teachers' attitudes toward the professional development training they are getting should be conducted to examine what teachers consider to be most and least valuable and why.

- A qualitative study of the level of teacher involvement in professional development should be conducted to measure how involved teachers are and the reasons behind their involvement or lack of involvement.
• A qualitative study of why teachers prefer face-to-face or online method of delivery should be conducted to determine the reasons teachers feel a certain way after they participate in professional training.

• A research study of principals', professional development coordinators', and superintendents' attitudes toward professional development training of K-12 teachers should be conducted.

• A research study comparing teachers' attitudes toward the same professional development activity taught online and face-to-face should be conducted to see if the delivery method makes a difference.

• A research study of students' achievement as it relates to professional development should be examined to show if the delivery method of the professional training makes a difference.

• A qualitative research study should be conducted to examine the reasons behind the lack of ample support K-12 teachers are receiving during and after online training.

• A qualitative study should examine why some teachers are not willing to utilize technology as an instructional tool in their classes.

During the past decade, more and more technology has been implemented and utilized in schools. The need for online professional development is increasing. Therefore, more quantitative and qualitative research studies that examine how teachers, principals, and superintendents feel about online professional development should be conducted. Prior to these studies, the
researchers should define online professional development in clear terms so participants would know what counts as online learning and what does not.

Reflections

This section is intended for the researcher to reflect on the dissertation process as a whole. It was a journey full of rich learning experiences. The researcher gained a vast amount of knowledge throughout the study from day one of thinking about the research topic to the last day of printing the final draft. Some of the experience led the researcher to form specific opinions and judgments. A series of incidents were very intriguing, they led the researcher to think deeply about the educational system in Mississippi. The researcher contacted about a 100 districts via e-mail and telephone and explained the value of the research project and what it was all about; only a few replied. Out of the few that replied, only (9) approved the study.

The researcher assumed that because the majority of the superintendents who were contacted were Ph.D. holders that they would understand the value of research and the positive impact such a study could have on their schools. To the researcher’s shock, that was not true. The researcher was stunned by the replies some superintendents had and the remarks they made. It was obvious that a number of these educational leaders did not believe in the significance of research; some of them were so frightened that the researcher would discover something that was taking place in their districts that they did not want to “reveal” to the world. What message do such behaviors convey? If educational leaders do not believe in the value of research, then how could they engage themselves and
their teachers in research-base, high-quality professional development? If educational leaders have such passive attitudes toward research related to professional learning and technology, then how do they expect their schools to improve? Do those principals and superintendents think they are doing everything the "right" way and their teachers and schools are just "perfect" the way they are? What educational benefit comes from such attitudes? Educational leaders have to support research projects, especially ones that target professional development, if they want their schools to perform at a higher level.
APPENDIX A

PROFESSIONAL DEVELOPMENT SURVEY

**Demographics**

1. Gender: □ Female □ Male
2. Age: □ 20-30 □ 31-40 □ 41-50 □ 51-60 □ over 60
3. Ethnicity: □ White □ Asian □ Black, of African descent □ Black, not of African descent □ Hispanic □ Native American □ Other
4. What grade level do you currently teach?
   □ K-3 □ 4-5 □ 6-8 □ 9-12
5. Current content area: _____________________________
6. How many years of teaching experience do you have? ______________________
7. What is the county location of your school? ______________________
8. How would you rate your computer skill level?
   □ novice □ good □ very good □ expert
9. How often do you access e-mail?
   □ hardly ever □ weekly □ several times a week □ daily □ several times a day

Please respond to the following questions based on your experience in formal professional development (PD): conferences, workshops, training, mentoring, courses, co-teaching, coaching, institutes, academies, continuing education credits, and other similar activities regardless of format (online or face-to-face).

10. How important do you think professional development (PD) is?
    □ not important □ somewhat important □ important □ very important
11. How important do you think PD is according to your principal?
    □ not important □ somewhat important □ important □ very important
12. Does your district offer online PD?
    □ yes □ no □ I do not know
13. Is PD for teachers part of your school improvement plan?
    □ yes □ no □ I do not know
14. Approximately how many PD activities have you participated in during your career? ______________________

Over
15. How many PD activities have you participated in during the past 12 months?

- □ one
- □ 2-3
- □ 4-5
- □ 6-7
- □ 8-9
- □ more than 9

16. How much time have you spent on PD during the past 12 months?

- □ 8 hours or less
- □ 9-16 hours
- □ 17-32 hours
- □ 33 hours or more

<table>
<thead>
<tr>
<th>Based on the experience you had in professional development (PD), how would you rate the following?</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. PD impact on your student achievement.</td>
</tr>
<tr>
<td>18. PD impact on your teaching practices.</td>
</tr>
<tr>
<td>19. Your satisfaction with your district’s current PD program.</td>
</tr>
<tr>
<td>20. Teachers’ involvement in PD planning.</td>
</tr>
<tr>
<td>21. The choice you have in the type of PD you receive.</td>
</tr>
<tr>
<td>22. The value of integrating technology into instruction.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PDA: Face-to-Face Professional Development Activity(ies)</th>
<th>Face-to-face PD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the experience you had in face-to-face PDA, how would you rate the following?</td>
<td></td>
</tr>
<tr>
<td>23. The importance of the PDA.</td>
<td></td>
</tr>
<tr>
<td>24. The usefulness of the PDA.</td>
<td></td>
</tr>
<tr>
<td>25. The benefit you received from the PDA.</td>
<td></td>
</tr>
<tr>
<td>26. The degree of knowledge you received from the PDA.</td>
<td></td>
</tr>
<tr>
<td>27. Your confidence in the skills you learned in the PDA.</td>
<td></td>
</tr>
<tr>
<td>28. The helpfulness of the instructor of the PDA.</td>
<td></td>
</tr>
<tr>
<td>29. The feedback you received during the PDA.</td>
<td></td>
</tr>
<tr>
<td>30. The feedback you received after the PDA.</td>
<td></td>
</tr>
<tr>
<td>31. The support and guidance you received during the PDA.</td>
<td></td>
</tr>
<tr>
<td>32. The usability of the skills after the PDA.</td>
<td></td>
</tr>
</tbody>
</table>
Based on the experience you had, how would you rate the following face-to-face PDA?

<table>
<thead>
<tr>
<th>Activity (s)</th>
<th>does not apply</th>
<th>poor</th>
<th>moderate</th>
<th>good</th>
<th>excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>University courses.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshops.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conferences.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentoring programs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutes or Academies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional learning communities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have not participated in online professional development, please STOP here and return questionnaire. Thank You!

OPDA: Online Professional Development Activity(ies)

Based on the experience you had in online PDA, how would you rate the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>none or not at all</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>The importance of the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The usefulness of the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The benefit you received from the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The degree of knowledge you received from the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your confidence in the skills you learned in the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The helpfulness of the instructor of the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The feedback you received during the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The feedback you received after the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The support and guidance you received during the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your comfort level in integrating technology into your instruction before participating in OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your comfort level in integrating technology into your instruction after participating in OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your use of the Internet as part of your teaching method before participating in the OPDA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Over

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51. Your use of the Internet as part of your teaching method after participating in the OPDA.

52. The number of assignments you gave directing students to research via the Internet before you participated in OPDA.

53. The number of assignments you gave directing students to research via the Internet after you participated in OPDA.

54. The usability of the skills after the OPDA.

55. Your satisfaction with your district's current OPD program.

| Based on the experience you had, how would you rate the following online PDA? |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| does not apply  | poor            | moderate        | good            | excellent       |
| 56. Online courses. |                |                 |                 |                 |
| 57. Online course supplements. |        |                 |                 |                 |
| 58. Online workshops. |              |                 |                 |                 |
| 59. Online video-conferencing. |            |                 |                 |                 |
| 60. WebCT.      |                 |                 |                 |                 |

61. Which do you prefer? □ Face-to-face PD □ Online PD

62. Would you consider participating in additional online professional development activities?

63. Do you have any suggestions to improve online professional development?

64. Were there certain aspects of online professional development activity(ies) that proved more effective than others?

65. Were there certain aspects of online professional development activity(ies) that proved less effective than others?

66. Can professional development be done solely online? Why or why not?

Thank You!
APPENDIX B

HUMAN SUBJECTS PROTECTION REVIEW

TO: Nisrine Shatila
c/o Kyna Shelly, Ph.D.
118 College Drive #5027
Hattiesburg, MS 39406-0001

FROM: Lawrence A. Hosman, Ph.D.
HSPRC Chair

PROTOCOL NUMBER: 27030727
PROJECT TITLE: Teachers' Attitudes Toward Traditional and Online Professional Development

Endorsed is The University of Southern Mississippi Human Subjects Protection Review Committee Notice of Committee Action taken on the above referenced project proposal. If I can be of further assistance, contact me at (601) 266-4279, FAX at (601) 266-4275, or you can e-mail me at Lawrence.Hosman@usm.edu. Good luck with your research.
HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 27030727
PROJECT TITLE: Teachers' Attitudes Toward Traditional and Online Professional Development
PROPOSED PROJECT DATES: 02/15/07 to 12/30/07
PROJECT TYPE: New Project
PRINCIPAL INVESTIGATORS: Nisrine Adada Shatila
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Educational Leadership & Research
FUNDING AGENCY: N/A
HSPRC COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 03/07/07 to 03/06/08

Lawrence A. Hosman, Ph.D.
HSPRC Chair
APPENDIX C
PERMISSION LETTERS FROM THE SUPERINTENDENTS OF THE NINE PUBLIC SCHOOL DISTRICTS

Hattiesburg Public School District
Post Office Box 1569
Hattiesburg, MS 39403-1569

Ms. Nisrine Adala Shatila
118 College Drive, # 6928
Hattiesburg, MS 39406-0001

March 23, 2007

Dear Ms. Adala:

Your request to conduct a study using a questionnaire in the Hattiesburg Public School District is approved, subject to the following conditions:

1. Human Subjects Protection Committee approval must be obtained before material will be distributed. Please return those approval documents to my attention.

2. Upon approval by the HSPRC, your questionnaires and other material should be bundled and brought to the HPSD Central Office in accordance with the following:

<table>
<thead>
<tr>
<th>School</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hattiesburg High School</td>
<td>80</td>
</tr>
<tr>
<td>Ninth Grade Academy</td>
<td>30</td>
</tr>
<tr>
<td>Bethune Alternative School</td>
<td>15</td>
</tr>
<tr>
<td>Burger Middle School</td>
<td>80</td>
</tr>
<tr>
<td>Burney Elementary School</td>
<td>35</td>
</tr>
<tr>
<td>Grace Christian Elementary</td>
<td>30</td>
</tr>
<tr>
<td>Hawkins Elementary</td>
<td>30</td>
</tr>
<tr>
<td>Rowan Elementary</td>
<td>30</td>
</tr>
<tr>
<td>Thames Elementary</td>
<td>80</td>
</tr>
<tr>
<td>Woodley Elementary</td>
<td>35</td>
</tr>
</tbody>
</table>

Your material will be sent to each school with a notice from this office asking principals to deliver the material to each teacher. Questionnaires should include a stamped, self-addressed return envelope for teachers to return them to you. HPSD personnel will not be tasked with collecting and returning the questionnaires.

3. Permission is granted for this study only. Any future research must be considered separately.

Sincerely,

[Signature]

Annie P. Wimbish, Ed.D.
Superintendent

Alan Oubre
Executive Director of Support Services

CF:
Dr. Gloria Robinson

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February 2, 2007

Ms. Nisrine Adada Shatila
Educational Leadership & Research
University of Southern Mississippi
118 College Drive, #6928
Hattiesburg, MS 39406-0001

Dear Ms. Shatila:

Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in our district.

Please contact my office if you need more information.

Sincerely,

Lea Barrett
Superintendent
February 23 2007

To Whom It May Concern:

Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in our district.

Sincerely,

Jack McAlpin, Superintendent
Simpson County School District

/bm
Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in our district.

Robert E. Hirsch
Superintendent
January 5, 2007

To Whom It May Concern:

Upon approval from the Human Subjects Institutional Review Board of the University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in the Indianola School District.

Sincerely,

King David Rush, Ed. D.
Superintendent
To Whom It May Concern:

Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in the Greenwood Public School District.

Leslie L. Daniels, Ed.D.
Superintendent

February 6, 2007
Upon approval from the Human Subjects Institutional Review Board of the University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in our district.

Kim Stasny
Superintendent
Bay St. Louis-Waveland School District
201 Carroll Avenue
Bay St. Louis, MS 39520
(228) 467-6621
April 16, 2007

Dear Sir or Madam:

Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K-12 teachers in our district.

I.S. Sanford, Jr.
Superintendent of Education
To Whom It May Concern:

Upon approval from the Human Subjects Institutional Review Board of The University of Southern Mississippi, Nisrine Adada Shatila has permission to collect data for her dissertation project Online Professional Development by distributing questionnaires to K - 12 teachers in our district.

Sincerely,

[Signature]

Gregory D. Dearman, Ed. D.
Superintendent, PCSD
March, 2007

I am a graduate student at The University of Southern Mississippi in the Educational Leadership & Research Department. I am conducting a research study of K-12 teachers to study their attitudes toward online and traditional professional development under the supervision of Dr. Ronald Styron Jr., Associate Dean of the College of Education & Psychology.

As a participant you are being asked to fill out a questionnaire, which will take approximately 15 minutes. I will hold all of your responses in the strictest of confidence. No names will be reported on any documents. In addition, all data will be reported in aggregate form only. Your participation in this study is voluntary. You are free not to answer any question and to withdraw from this study at any time without penalty.

Although there may be no direct individual benefits, this study and the related survey play a key role in the work of administrators in evaluating and improving professional development programs which have a great impact on teachers’ and students’ performance.

Please accept my thanks in advance for your help in this study. If you have any inquiry about the research study or the survey instrument please contact me. By filling out and returning the questionnaire in the envelope provided, you are indicating your consent to participate in the study. Please return on or before April 12, 2007. Your confidentiality is guaranteed. I appreciate your assistance and cooperation with this important study.

Sincerely,

Nisrine Adada Shatila
Graduate Assistant
The University of Southern Mississippi
118 College Dr. # 6928
Hattiesburg, MS 39406

This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human participants follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-6820.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
</table>
| Q62      | Would you consider participating in additional online professional development activities? | • Yes (78%)  
• No (22%) |
| Q63      | Suggestions to improve OPD | • No suggestions (45.7%)  
• More support & feedback (10 %)  
• Clear instructions (1.4%)  
• Easier access to instructor (1.4%)  
• Reliable computers at school (2.9%)  
• More OPD, more variety (5.7%)  
• More OPD to count as CEUs (2.9%)  
• Let teachers choose the OPD (1.4%)  
• Needs to meet users' needs (8.6%)  
• Needs to be relevant & useful (4.3%)  
• Needs to be simpler & shorter (4.3%)  
• More information on availability (1.4%) |
### Table (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
</table>
| Q64      | Effective aspects of OPDA | • More time at school for OPD (4.3%)  
|          |                       | • Fewer assignments & deadlines (1.4%)  
|          |                       | • Provide more material (2.9%)  
|          |                       | • Need to be less technical (1.4%)  
|          |                       | • None (41.7%)  
|          |                       | • I learned more by doing (1.7%)  
|          |                       | • I worked at my own pace (8.3%)  
|          |                       | • Follow-up (1.7%)  
|          |                       | • Good readings (3.3%)  
|          |                       | • Having a product/outcome based (3.3%)  
|          |                       | • Live chat & discussions (8.3%)  
|          |                       | • Conference calls (1.7%)  
|          |                       | • Interactivity (1.7%)  
|          |                       | • Visuals (3.3%)  
|          |                       | • Access & availability (5%)  
|          |                       | • Multiple choice questions (1.7%)  
|          |                       | • Yes (13.3%)  
|          |                       | • Valuable links & web pages (3.3%)  

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Table (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q65 Less effective aspects of OPDA</td>
<td></td>
<td>- Review of skills (1.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Step by step instructions (1.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Useful teaching strategies (1.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Technology training (1.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- None (45.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Yes (14%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Just reading handouts or slides (5.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lengthy sessions (3.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No direct contact with instructor (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Slow feedback &amp; support (7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No follow-up (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No interaction (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Hard for teachers with limited computer skills (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Tests (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No hands-on activities (1.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No visuals (1.8%)</td>
</tr>
</tbody>
</table>
Table (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q66</td>
<td>Can professional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>development be</td>
<td>• Yes (15%)</td>
</tr>
<tr>
<td></td>
<td>done solely online?</td>
<td>• No (82.8%)</td>
</tr>
<tr>
<td></td>
<td>Why?</td>
<td>• Not sure (2.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• I work on my own</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pace (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• All districts have</td>
</tr>
<tr>
<td></td>
<td></td>
<td>computers &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Information &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>activities can be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>shared online (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• I learn more via</td>
</tr>
<tr>
<td></td>
<td></td>
<td>online (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• I don't see why not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sure, if teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>are provided with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>technological help</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Hands-on activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>can be simulated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>effectively on a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>computer (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Saves meeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time/learn more</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.1%)</td>
</tr>
</tbody>
</table>
Table (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Many teachers can go through training at the same time (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• I love it. It is convenient (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A combination of face-to-face and OPD is better (1.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Not all teachers are comfortable with using computers (7.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Communication should vary to meet individual teachers' needs (9.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Face-to-face provides more instant feedback (11.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need real life experiences/hands-on (13%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need human interaction with other teachers &amp; instructor (39%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need visuals used in face-to-face (2.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need active participation (5.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need more information about OPD (1.3%)</td>
</tr>
</tbody>
</table>

Why not?
Table (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Summary of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>•</td>
<td>We benefit more from face-to-face</td>
<td>(2.6%)</td>
</tr>
<tr>
<td></td>
<td>(2.6%)</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Many teachers do not have</td>
<td></td>
</tr>
<tr>
<td></td>
<td>computer/Internet access outside</td>
<td></td>
</tr>
<tr>
<td></td>
<td>school (1.3%)</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Some topics cannot be done online</td>
<td>(1.3%)</td>
</tr>
<tr>
<td></td>
<td>(1.3%)</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Online classes need more focusing</td>
<td>(1.3%)</td>
</tr>
<tr>
<td></td>
<td>(1.3%)</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Timing is overwhelming (1.3%)</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

A SUMMARY OF THE FREQUENCIES AND PERCENTAGES OF TEACHERS' RESPONSES

<table>
<thead>
<tr>
<th>Based on the experience you had in professional development (PD), how would you rate the following?</th>
<th>none or not at all</th>
<th>Low</th>
<th>moderate</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. PD impact on your student achievement.</td>
<td>11(3.6%)</td>
<td>34(11%)</td>
<td>149(48.4%)</td>
<td>92(29.9%)</td>
<td>22(7.1%)</td>
</tr>
<tr>
<td>18. PD impact on your teaching practices.</td>
<td>5(1.6%)</td>
<td>21(6.8%)</td>
<td>117(38%)</td>
<td>130(42.2%)</td>
<td>35(11.4%)</td>
</tr>
<tr>
<td>19. Your satisfaction with your district's current PD program.</td>
<td>8(2.6%)</td>
<td>73(23.6%)</td>
<td>120(38.8%)</td>
<td>93(30.1%)</td>
<td>15(4.9%)</td>
</tr>
<tr>
<td>20. Teachers' involvement in PD planning.</td>
<td>42(13.5%)</td>
<td>89(28.7%)</td>
<td>102(32.9%)</td>
<td>60(19.4%)</td>
<td>17(5.5%)</td>
</tr>
<tr>
<td>21. The choice you have in the type of PD you receive.</td>
<td>54(17.5%)</td>
<td>92(29.8%)</td>
<td>96(31.1%)</td>
<td>57(18.4%)</td>
<td>10(3.2%)</td>
</tr>
<tr>
<td>22. The value of integrating technology into instruction.</td>
<td>4(1.3%)</td>
<td>31(10%)</td>
<td>80(25.9%)</td>
<td>133(43%)</td>
<td>61(19.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PDA: Face-to-Face Professional Development Activity(ies)</th>
<th>none or not at all</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the experience you had in face-to-face PDA, how would you rate the following?</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>23. The importance of the PDA.</td>
<td>1(3.3%)</td>
<td>28(9%)</td>
<td>106(34.2%)</td>
<td>129(41.6%)</td>
<td>46(14.8%)</td>
</tr>
<tr>
<td>24. The usefulness of the PDA.</td>
<td>0(0%)</td>
<td>28(9%)</td>
<td>123(39.7%)</td>
<td>123(39.7%)</td>
<td>36(11.6%)</td>
</tr>
<tr>
<td>25. The benefit you received from the PDA.</td>
<td>3(1%)</td>
<td>33(10.7%)</td>
<td>123(39.8%)</td>
<td>120(38.8%)</td>
<td>30(9.7%)</td>
</tr>
<tr>
<td>26. The degree of knowledge you received from the PDA.</td>
<td>21(6.6%)</td>
<td>27(8.7%)</td>
<td>129(41.7%)</td>
<td>124(40.1%)</td>
<td>27(8.7%)</td>
</tr>
<tr>
<td>27. Your confidence in the skills you learned in the PDA.</td>
<td>4(1.3%)</td>
<td>20(6.5%)</td>
<td>127(41%)</td>
<td>128(41.3%)</td>
<td>31(10%)</td>
</tr>
<tr>
<td>28. The helpfulness of the instructor of the PDA.</td>
<td>0(0%)</td>
<td>14(4.5%)</td>
<td>119(38.5%)</td>
<td>146(47.2%)</td>
<td>30(9.7%)</td>
</tr>
<tr>
<td>29. The feedback you received during the PDA.</td>
<td>8(2.6%)</td>
<td>37(11.9%)</td>
<td>128(41.3%)</td>
<td>116(37.4%)</td>
<td>21(6.8%)</td>
</tr>
<tr>
<td>30. The feedback you received after the PDA.</td>
<td>19(6.2%)</td>
<td>69(22.4%)</td>
<td>124(40.3%)</td>
<td>80(26%)</td>
<td>16(5.2%)</td>
</tr>
<tr>
<td>31. The support and guidance you received during the PDA.</td>
<td>11(3.3%)</td>
<td>30(9.7%)</td>
<td>131(42.3%)</td>
<td>129(41.6%)</td>
<td>19(6.1%)</td>
</tr>
<tr>
<td>32. The usability of the skills after the PDA.</td>
<td>6(1.9%)</td>
<td>27(8.7%)</td>
<td>144(46.5%)</td>
<td>112(36.1%)</td>
<td>21(6.8%)</td>
</tr>
</tbody>
</table>

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Based on the experience you had, how would you rate the following face-to-face PDA?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Rate</th>
<th>not app</th>
<th>poor</th>
<th>moderate</th>
<th>good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. University courses.</td>
<td></td>
<td>49(15.9%)</td>
<td>13(4.2%)</td>
<td>66(21.2%)</td>
<td>126(40.9%)</td>
<td>54(17.5%)</td>
</tr>
<tr>
<td>34. Workshops.</td>
<td></td>
<td>5(1.6%)</td>
<td>13(4.2%)</td>
<td>95(30.8%)</td>
<td>135(43.8%)</td>
<td>60(19.5%)</td>
</tr>
<tr>
<td>35. Conferences.</td>
<td></td>
<td>14(4.5%)</td>
<td>16(5.2%)</td>
<td>90(29.1%)</td>
<td>128(41.4%)</td>
<td>61(19.7%)</td>
</tr>
<tr>
<td>36. Mentoring programs.</td>
<td></td>
<td>78(25.7%)</td>
<td>29(9.6%)</td>
<td>81(26.7%)</td>
<td>92(30.4%)</td>
<td>23(7.6%)</td>
</tr>
<tr>
<td>37. Institutes or Academies.</td>
<td></td>
<td>77(25.5%)</td>
<td>22(7.3%)</td>
<td>81(26.8%)</td>
<td>88(29.1%)</td>
<td>34(11.3%)</td>
</tr>
<tr>
<td>38. Professional learning communities.</td>
<td></td>
<td>91(30.1%)</td>
<td>22(7.3%)</td>
<td>87(28.8%)</td>
<td>74(24.5%)</td>
<td>28(9.3%)</td>
</tr>
</tbody>
</table>

If you have not participated in online professional development, please **STOP here and return questionnaire.** Thank You!

### OPDA: Online Professional Development

<table>
<thead>
<tr>
<th>Activity(ies)</th>
<th>none or not at all</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. The importance of the OPDA.</td>
<td>1(1%)</td>
<td>13(13.1%)</td>
<td>31(31.3%)</td>
<td>44(44.4%)</td>
<td>10(10.1%)</td>
</tr>
<tr>
<td>40. The usefulness of the OPDA.</td>
<td>1(1%)</td>
<td>15(15.3%)</td>
<td>31(31.6%)</td>
<td>38(38.8%)</td>
<td>13(13.3%)</td>
</tr>
<tr>
<td>41. The benefit you received from the OPDA.</td>
<td>1(1%)</td>
<td>16(16.5%)</td>
<td>28(28.9%)</td>
<td>40(41.2%)</td>
<td>12(12.4%)</td>
</tr>
<tr>
<td>42. The degree of knowledge you received from the OPDA.</td>
<td>1(1%)</td>
<td>15(15.2%)</td>
<td>29(29.3%)</td>
<td>42(42.4%)</td>
<td>12(12.1%)</td>
</tr>
<tr>
<td>43. Your confidence in the skills you learned in the OPDA.</td>
<td>1(1%)</td>
<td>12(12.3%)</td>
<td>38(38.8%)</td>
<td>40(40.8%)</td>
<td>7(7.1%)</td>
</tr>
<tr>
<td>44. The helpfulness of the instructor of the OPDA.</td>
<td>5(5.1%)</td>
<td>18(18.2%)</td>
<td>48(48.5%)</td>
<td>22(22.2%)</td>
<td>6(6.1%)</td>
</tr>
<tr>
<td>45. The feedback you received during the OPDA.</td>
<td>5(5.1%)</td>
<td>21(21.2%)</td>
<td>37(37.4%)</td>
<td>30(30.3%)</td>
<td>6(6.1%)</td>
</tr>
<tr>
<td>46. The feedback you received after the OPDA.</td>
<td>9(9.2%)</td>
<td>24(24.5%)</td>
<td>37(37.8%)</td>
<td>23(23.5%)</td>
<td>5(5.1%)</td>
</tr>
<tr>
<td>47. The support and guidance you received during the OPDA.</td>
<td>5(5.1%)</td>
<td>13(13%)</td>
<td>44(44%)</td>
<td>33(33%)</td>
<td>5(5%)</td>
</tr>
<tr>
<td>48. Your comfort level in integrating technology into your instruction before participating in OPDA.</td>
<td>3(3%)</td>
<td>18(18%)</td>
<td>37(37%)</td>
<td>31(31%)</td>
<td>11(11%)</td>
</tr>
<tr>
<td>49. Your comfort level in integrating technology into your instruction after participating in OPDA.</td>
<td>1(1%)</td>
<td>11(11.1%)</td>
<td>35(35.4%)</td>
<td>40(40.4%)</td>
<td>12(12.1%)</td>
</tr>
</tbody>
</table>

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50. Your use of the Internet as part of your teaching method before participating in the OPDA.

|            | 7(7.1%) | 15(15.2%) | 36(36.4%) | 31(31.3%) | 10(10.1%) |

51. Your use of the Internet as part of your teaching method after participating in the OPDA.

|            | 2(2%)   | 14(14.1%) | 36(36.4%) | 34(34.3%) | 13(13.1%) |

52. The number of assignments you gave directing students to research via the Internet before you participated in OPDA.

|            | 23(23%) | 30(30%)   | 29(29%)   | 16(16%)   | 2(2%)     |

53. The number of assignments you gave directing students to research via the Internet after you participated in OPDA.

|            | 20(20.2%) | 21(21.2%) | 31(31.3%) | 22(22.2%) | 5(5.1%)   |

54. The usability of the skills after the OPDA.

|            | 9(9.2%)  | 15(15.3%) | 36(36.7%) | 32(32.7%) | 6(6.1%)   |

55. Your satisfaction with your district’s current OPD program.

|            | 15(15.2%) | 30(30.3%) | 35(35.4%) | 13(13.1%) | 6(6.1%)   |

Based on the experience you had, how would you rate the following online PDA?

|            | does not apply | poor   | moderate | good   | excellent |

56. Online courses.

|            | 9(8.9%) | 8(7.9%) | 32(31.7%) | 41(40.6%) | 11(10.9%) |

57. Online course supplements.

|            | 23(22.8%) | 9(8.9%)  | 30(29.7%) | 31(30.7%) | 8(7.9%)   |

58. Online workshops.

|            | 21(21%)   | 11(11%)  | 31(31%)   | 31(31%)   | 6(6%)     |

59. Online video-conferencing.

|            | 36(36%)   | 12(12%)  | 23(23%)   | 25(25%)   | 4(4%)     |

60. WebCT.

|            | 45(45.5%) | 7(7.1%)  | 20(20.2%) | 24(24.2%) | 3(3%)     |

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REFERENCES


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