THE EFFECTS OF A PROFESSIONAL DEVELOPMENT SCHOOL PROGRAM ON STUDENT ACHIEVEMENT AS MEASURED BY THE IOWA TEST OF BASIC SKILLS, TEACHER PERCEPTIONS OF SCHOOL CLIMATE, AND PRE-SERVICE TEACHER REFLECTIONS

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THE EFFECTS OF A PROFESSIONAL DEVELOPMENT SCHOOL PROGRAM ON STUDENT ACHIEVEMENT AS MEASURED BY THE IOWA TEST OF BASIC SKILLS, TEACHER PERCEPTIONS OF SCHOOL CLIMATE, AND PRE-SERVICE TEACHER REFLECTIONS

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Dissertation

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ABSTRACT

Professional Development Schools are innovations in which universities are joined with schools. Commonly teacher candidates are immersed in one setting. Early PDS research tended to focus on one aspect of a program. Those aspects of PDS studied were typically student achievement, the professional development of faculty, or teacher candidate preparation. The focus of this research was to look at those same aspects from a multi-dimensional view to determine the benefits for each group. Some form of evaluation must be developed to provide evidence of the efficacy of PDS for all stakeholders.

The question one must ask of any PDS is: What difference does a PDS have on student achievement? Analysis was run to investigate the effectiveness of PDS regular education instruction as it related to achievement. This was measured by the Iowa Test of Basic Skills in comparison groups and in contrast to the instruction regular education students traditionally receive and their achievement on the same tests.

This dissertation was a mixed methods study utilizing quantitative research when investigating the effects of a PDS program on student achievement, and teachers' perceptions of school climate. This 2-year study used qualitative research when analyzing pre-service teacher reflections in one setting and at one teacher

preparatory institution that is part of a state-wide system. Teacher demographic data was obtained by surveying regular education teachers in the school (PDS and traditional).

Using the ITBS, the NASSP's *Comprehensive Assessment of School Climate* instrument, and Loucks and Hall's Concerns-Based Adoption Model, this study investigated the students' achievement, the classroom teachers' perceptions of climate, and analysis of teacher candidates' reflective journals. When measuring achievement using the ITBS, it was found that five of the six hypotheses tested, while not statistically significant, were in the predicted direction. This quantitative data is supportive of a trend that a positive relationship exists between this PDS setting and academic gain. Results indicated that teachers participating in the PDS scored significantly higher on the NASSP School Climate Survey. Additionally, the self-reported reflective journal themes of the teacher candidates matched the CBAM, indicating that these pre-service teachers were developing as teaching professionals.

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CHAPTER I

INTRODUCTION

With the publication of *A Nation at Risk* in 1983 decrying the state of public schools in America, education has been of growing interest to politicians, educators, parents, and the overall citizenry (Berger & Neuhaus, 1977; Counts, 1934; Dewey, 1916/1966; Gallup, 1984; Goodlad, 1979; Gordon & Breivogel, 1976; Harris, Libresco, & Parker, 1985; Tangle, 2003). All of these are stakeholders with a significant investment in the success of the public school system. No political campaign seems complete without candidates vying for the standing in public perception as the education candidate who can cure the perceived deficiencies of the American public school and who can more efficiently manage tax dollars in the funding of public schools. Educators are continually seeking to improve the achievement of students, not only for the teachers' self-fulfillment but also as a method of improving the teachers' status as professionals and as a basis for increased contractual gains. Parents are naturally concerned over the public schooling process that is preparing their children to become effective citizens with employable skills. The overall citizenry of America has invested significant tax dollars to ensure that children are trained to become good citizens who possess the skills needed to meet the challenges of an ever-changing world. While these investments in American public

education are varied, they share the concern of preparing students for future challenges within a democratic society.

Parents, business leaders, educators, and politicians have all offered proposals for changing school structure and organizational patterns. These proposals have included modifications in governance, instructional techniques, technology, curriculum, methods of school funding, and class size. Dissatisfaction with the perceived condition of public education led to the creation of magnet schools, charter schools, and tuition vouchers, as well as inter and intra-district school choice and recently to the professional development school partnership.

The emerging question is whether professional development school partnerships work as they are intended to and do they have an effect on the perceptions of classroom teachers, instructional strategies of teacher candidates, and achievement of students within instructional settings. With the establishment of professional development school partnerships, there should be a relationship between teacher perceptions of school climate, teacher candidate reflections of instructional effectiveness, and achievement scores of students. Research has shown that, in comparison to traditional teacher education programs, teacher preparation in Professional Development Schools is more apt to demonstrate desired organizational characteristics (Abdal-Haqq, 1998; Darling-Hammond, 1994; Petrie, 1995; Valli, Cooper, & Frankes, 1997). Additionally, there is some evidence that PDS-based teacher education produces teachers with greater confidence and self-efficacy in teaching (Abdal-Haqq, 1998). Literature also suggests that teacher candidates

completing a PDS-based program are more likely to use the results of reflection to vary their instruction and pedagogical practices based on the classroom situation.

Reform and Teacher Education

Prior to the 19th century, formal programs of teacher education were not in existence in the United States. With an increasing concern over the welfare and education of youth, formal teacher education programs were introduced in the 1880s. As tax dollars were utilized to support public education, a demand for well-trained teachers increased throughout the country. Institutions known as "Normal Schools" were founded with the purpose of training teachers (Johnson, 1999, p.1). Normal Schools eventually grew into colleges of education within the current public university settings of today.

Toward the end of the 20th century, there were constant pressures for schools to change and improve in order to meet the demands of the business world. However, the majority of society's focus was on the K-12 schools and not on the reform of teacher education programs. It was during the late 1960s and early 1970s that the relationship between improving teacher education and improvements in public education emerged. Associations between public schools and schools of education during this time period were usually established in order to facilitate work of educational researchers and were difficult relationships to maintain (Petrie, 1995). Clark (1999) wrote that partnerships of the 1960s and 1970s that were mutually beneficial to schools and universities rarely occurred because of the lack of interdependence of the two entities.

Former President Ronald Reagan established the National Commission on Excellence in Education on August 26, 1981. This commission's work culminated in a national report, *A Nation at Risk*, published in April of 1983. This publication identified the public school system in America as the primary source of a lagging economy and the failings in the industrial sector of our country. The report also addressed problems facing education in America and made recommendations to end the perceived decline (Toner, 1996).

Proposals resulting from *A Nation at Risk* included changes in school structure and organization, utilization of technology in the classroom, instructional techniques, class size, and curriculum. These reform proposals were focused on changing the characteristics of public education as a method to enhance the academic progress of the students. While some of these reforms were somewhat successful, the overall achievement of American elementary and secondary public school children failed to improve to any significant extent (Hallinan & Khmelkov, 2001).

Subsequently, in the mid-1980s policy makers and educational leaders shifted the reform movement from improving schools to improving teaching. The critical role of the teacher in the learning process was a component of successful schools to be addressed. Two national reports released in 1986 sought to redefine the importance of the teacher. *A Nation Prepared: Teachers for the 21st Century* (Carnegie Task Force on Teaching as a Profession, 1986) was a publication of the Carnegie Task Force on Teaching as a Profession. This task force was made up of public officials, educators, and teacher union representatives. The Holmes Group, a nationwide consortium of

universities represented by deans of colleges and schools of education, was also created in 1986. The Holmes Group report was entitled *Tomorrow's Teachers* (Holmes Group, 1986).

The reports of the Carnegie Task Force on Teaching as a Profession and the Holmes Group called for the improvement of the quality of elementary and secondary education through the transformation of teaching into a profession of highly trained educators given new responsibilities for redesigning education for their students.

One of the most recent and widespread sweeping reforms that these reports spawned was the *No Child Left Behind Law*. On Jan. 8, 2002, President Bush signed into law the *No Child Left Behind* Act of 2001 (NCLB). This new law represents an education reform plan and contains the sweeping changes to the Elementary and Secondary Education Act (ESEA) enacted in 1965. It changed the federal government's role in kindergarten-through-grade-12 education by asking schools to describe their success in terms of what each student accomplishes. The act contained the President's four basic education reform principles: stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work. Additionally, educators are required to become highly qualified teachers in their teaching field. A highly qualified teacher, according to the U.S. Department of Education, is fully certified, has a bachelor's degree and has completed a content area major or has passed a content area test in the subject he/she is assigned to teach. In the state in which the PDS partnership being examined is located, a fully certified teacher must have a bachelor's

degree, a content area major and have passed a content area test. In addition, fully certified teachers in this state must have completed pedagogical course work in education, including student teaching. New educational partnerships were a vital component of this vision for reform. Professional development school partnerships were to unite K-12 schools and universities in an effort to alter entrenched patterns and behaviors of both institutions while improving educational experiences for students. Reinvigorated faculties and better-prepared teacher candidates were predicted outcomes of these partnerships:

> A number of individuals and organizations…advocate a new kind of school that is dedicated to the improvement of educational outcomes for students through research and development and the improvement of teaching and teacher preparation…these schools are regular K-12 public schools that have formed an enduring partnership with a university capable of mounting a powerful research and development agenda…to improve the quality of teaching and teacher education, improve the quality of effectiveness of educational research and produce higher levels of learning among students (Petrie, 1995, p. 23).

Purpose of the Study

The purpose of this study was to attain a multi-dimensional view of a professional development school site in order to determine the benefits for students, classroom teachers, and teacher candidates. While most studies pertaining to professional development schools analyzed one aspect of the PDS, this study looked at the whole program in a more holistic approach.

Increased student achievement in the setting examined in this study was the primary area of interest of this Professional Development School partnership, which included the public school district and the participating university.

Many PDSs have continued for numerous years quite successfully, while others have not stood the test of time. One of the significant factors that might account for the failure of PDSs could be the inability to demonstrate the instructional and educational benefits received by students within the PDS setting. The student achievement in the setting being examined in this study is of interest to both members of the Professional Development School partnership, the local school district and the participating university.

Public opinion within the school district and among school board members has conflicted concerning continued financial support and participation in such a program. This places the future of the PDS in jeopardy unless a significant benefit to the school population, in terms of improved student achievement, could be clearly demonstrated.

The participating university was interested in determining the success of methodologies learned in methodology classes and employed by pre-service teachers placed in this setting during field experience and student teaching assignments. The utilization of inquiry directed instruction to enhance student learning was the emphasis of university pedagogy courses. The university was seeking to identify one PDS model to be utilized in all of their PDS sites and will use the data from this study to compare and contrast this model to other sites currently partnered with the university.

The question one must ask is: what difference, if any, does a professional development school have on student achievement? What was needed was an analysis of the effectiveness of PDS regular education classroom instruction as it related to achievement as measured by the Iowa Test of Basic Skills in comparison groups and

in contrast to the instruction regular education elementary students traditionally receive and their achievement on the same tests over the same period of time.

According to Newman, Ridenour, Newman, and DeMarco (2002), there are nine general needs for social science research beyond merely answering questions.

1. Predict
2. Add to the knowledge base
3. Have a personal, social, institutional and/or organizational impact
4. Measure change
5. Understand complex phenomena
6. Test new ideas
7. Generate new ideas
8. Inform constituencies
9. Examine the past (p. 173).

This research had several purposes, one was adding to the knowledge base. Teitel (1996) asserted that there has been relatively little documentation of the impact of PDSs on student achievement and what is offered is generally buried amid other data. Secondly, this study has an institutional and/or organizational impact because of the nature of the design of the PDS being studied and the expansion by the same institution to other sites. Information gleaned from this study will be used to form a university model of professional development school partnerships for this institution. Measuring change was the focal point of this study utilizing the achievement scores of students being examined and the perceptions of the classroom teachers of the school climate over a 2-year time period. Lastly, informing constituencies of the impact of a professional development school program was one of the goals of all PDS sites (NCATE Standards). Results of the study were shared with the university's College of Education and the school district's administrative team through a report summarizing the findings.

There was an educational need to improve student learning and performance on statewide testing. There was state funding that was directly related to student performance on these test instruments. Additionally, residents of the school district, school board members, and school district administrators expressed concern over continued financial support and participation in the PDS program unless a significant benefit to the school population in terms of improved student achievement could be clearly demonstrated.

University administrators were interested in expanding the PDS program to other elementary schools within this district, as well as to neighboring districts, and were seeking verification of classroom instruction effectiveness. Additionally, both members of this PDS partnership shared the goal of improving classroom teacher performance, teacher candidate preparation, and the current relationship between the school and university in order to build a community of learners.

This study investigated the effect of a Professional Development School classroom setting on the achievement of regular education elementary students as compared to the achievement of regular education elementary students in a traditional classroom setting. This study also examined the effect of the professional development school setting being utilized on the teachers' perceptions of school climate using the National Association of Secondary School Principals (NASSP) School Climate Survey. Reflective journals of teacher candidates within this setting were also compared and contrasted to teacher candidates in traditional field experience and student teaching sites. This examination of reflective journals was completed to

gain an understanding of the effect of the PDS setting on teacher candidates' perceptions of their planning, instructional methodologies, effectiveness of instruction, assessment of students' learning, and classroom management techniques.

This study was conducted within one elementary public school setting in the beginning and developing stages of a PDS (National Council for Accreditation of Teacher Education Standards, 2001, pp. 6-7). It examined student achievement at two different points of time. Achievement measured by the Iowa Test of Basic Skills was evaluated from early in the 2002-2003 and 2003-2004 school years and at the conclusion of each academic year. This longitudinal study did specifically compare and contrast the achievement scores of regular education elementary students whose classrooms were participating in the Professional Development School program with those regular education elementary school students whose classrooms were not participating in the Professional Development School program within the same educational setting. In addition, this study determined in which content areas tested the greatest academic gains, if any, had been made in terms of national percentile scores.

Statement of the Problem

The teachers participating in this study were examined in two distinct groups. The first was comprised of those within this elementary public school setting that were not participating in the Professional Development School (PDS) program. The second was made up of those teachers in the same elementary school setting that were participants in the PDS program. The achievement scores of their classes were

utilized to measure the effect of the PDS on student learning. Thus, research focusing on Professional Development School (PDS) programs formed the framework for this study. Additionally, this research identified the effect of this professional development school setting on the classroom teachers' perceptions of school climate and the characteristics of teacher candidates' experiences through reflective journaling.

General Research Questions

This study sought to answer the following general research questions:

1. Is there is a significant difference in the achievement scores of elementary public school students enrolled in classrooms that are participating in this Professional Development School program as compared to the achievement scores of elementary public school students in traditional classrooms as measured by the Iowa Test of Basic Skills when holding pretest scores constant?

2. Compared to traditional classroom settings, does the presence of a teacher candidate, coupled with additional professional development training for the classroom teacher, predict success as measured by standard scores on the Iowa Test of Basic Skills, when holding pretest scores constant?

3. Is there a relationship between program participation and student school attendance?

4. Does the presence of a Professional Development School relate to teacher perception of school climate as measured by the National Association of Secondary School Principals School Climate Survey (using the following subscales: teacher-

student relationships; security and maintenance, student academic orientation; student behavioral values, student-peer relationships; and instructional management)?

5. In what ways do the reflective journals of teacher candidates in a professional development school setting reflect professional growth as measured by the Concerns-Based Adoption Model?

The population studied, by testing the following general research hypothesis, which were associated with specific hypotheses provided in Chapter III, can best answer these questions:

1. There is a significant difference between Iowa Test of Basic Skills scores of students in a PDS setting and students in a regular education classroom setting.

2. There is a significant difference between attendance of students in a PDS setting and students in a regular education classroom setting.

3. There is a significant difference between PDS teacher perception of school climate and non-PDS teacher perception of school climate.

4. There is a difference in themes identified and adjustment of practices demonstrating an increased awareness of pedagogical methods and the effect on student learning.

Conducting research to test these hypotheses and to generate hypotheses regarding teacher candidates' reflective journals would assist the school/university partnership in making informed decisions regarding the expansion of the PDS program to other school sites within this district and additional districts, the impact of this PDS program on student learning, and the influence of the professional development

opportunities offered in conjunction with the PDS program on the classroom teachers and teacher candidates.

Assumptions Underlying the Study

1. The researcher assumed that the participating regular education elementary school students and teachers were a representative sample of regular education elementary school students and teachers in the rural district from Western Pennsylvania from which the sample was drawn.

2. The regular education elementary school students sought to demonstrate an accurate reflection of their achievement during testing.

3. The teachers answering the school climate survey were doing so honestly, independently, and were not influenced by others.

4. An assumption was made that the estimates of reliability and validity of the school climate survey and Iowa Test of Basic Skills that have been established were appropriate for this population.

Delimitations

Several delimitations affect the scope of this study. First, the data for this investigation came entirely from one elementary school located in Western Pennsylvania. Second, the instruments selected to measure student achievement was the Iowa Test of Basic Skills and the NASSP's Comprehensive Analysis of School Environments-Information Management System (CASE-IMS). The CASE-IMS has 10 subscales, but 4 did not directly relate to the format of this study and, therefore, the researcher chose to utilize 6 of the subscales.

Definitions and Operational Terms

Achievement battery. A collection of tests from several subject areas that have all been standardized with the same group of students. That is, the norms for all tests have been obtained from a single group of students at each grade level. In this study, the IOWA Test of Basic Skills was used.

Cooperating teacher. Cooperating teachers have an earned baccalaureate degree and have completed a minimum of 3 years of successful teaching experience, with at least 1 year in the district. Cooperating teachers are selected by district officials in response to requests for placement by the university. They supervise the teacher candidate.

Developmental standard score. The developmental standard score is a number that describes a student's location on an achievement continuum.

Field experience. Field experience is a three-credit course that consists of a supervised classroom experience the semester prior to student teaching. Field practicum meets Monday through Friday for 3 weeks at an elementary school that is selected by the Field Coordinator from the university. Completion of two methods classes is required, with one being Methods of Reading. During this time teacher candidates may be asked to do a variety of tasks by their cooperating teacher, their university supervisor, or both. These may include but are not limited to: reading aloud to children, tutoring individual or small groups, teaching whole group instruction, observing and interviewing, making classroom materials, doing research, writing reflective journals, accompanying children to recess, lunch, assemblies, field trips, etc.

Both the cooperating teacher and the university supervisor evaluate teacher candidates. Field is graded on a Pass/No Credit basis.

Iowa Test of Basic Skills. A standardized achievement battery utilized for the primary purpose of providing information that can be used to improve instruction.

Professional Development School. For this study the PDS is defined as a collaborative partnership between a college/university and a school in which there is a shared responsibility for improving teacher education and student achievement.

Instructional setting. The classroom environment including all materials, resources, and instruction provided.

School climate. The perceptions about the characteristics of a school and its members.

Student achievement. The academic gains made by a student over a designated period of time.

Student teaching. Under the guidance of a cooperating teacher and university supervisor, students engage in two 8-week assignments on a full-time basis in specified school districts and attend scheduled seminars.

Supervisor. A university faculty member who is responsible for the following: conducting professional seminars that relate to teaching and to future employment; interpreting university policy for cooperating teachers, student teachers, and others; observing the student teacher's classroom activities systematically; and providing the student teacher with continuous feedback regarding all progress toward stated competencies.

Traditional classroom setting. A classroom setting where there is no additional Professional Development School staffing or professional development training beyond what is offered by the school district.

Summary

Professional Development Schools are collaborations that have been formed with varying success between growing numbers of colleges/universities and school districts. Whatever form a PDS may eventually grow into, one must ask whether professional development school partnerships work as they are intended to and do they have an effect on the perceptions of classroom teachers, instructional strategies of teacher candidates, and achievement of students within instructional settings. With the establishment of professional development school partnerships, there should be a relationship between teacher perceptions of school climate, teacher candidate reflections of instructional effectiveness, and achievement scores of students. Professional Development Schools must strive to improve upon student learning.

This study focused on the comparison of student achievement, as measured by the Iowa Test of Basic Skills for first grade through fifth grade students in regular education PDS classrooms and the achievement of similar students in non-PDS classrooms from the beginning to the end of the 2002-2003 and the 2003-2004 school years. A repeated measurement using the same testing instrument was administered near the close of each academic year. Additionally, this study examined the effect of the PDS on student absences during the same time period. Teacher perception of school climate was measured over the two academic years of this study. Lastly, the

impact of the PDS setting on teacher candidates was analyzed through the examination of reflective journals kept by the teacher candidates during their placements.

CHAPTER II

LITERATURE REVIEW

The purpose of this study was to examine the relationship between a professional development school classroom setting on elementary student achievement, as measured by classroom teachers' perceptions of school climate, and characteristics of teacher candidates' experiences as expressed through reflective journaling. As professional development school partnerships continue to be implemented between America's universities and school systems, one needs to understand the impact of this structural change, the potential benefits, the challenges to developing and maintaining partnerships, and the potential contributions this structure makes toward improving student achievement. A selected review of literature has been presented to document the history, characteristics, challenges, and impact of professional development school programs and the relationships between professional development schools and teaching/learning improvements for participants.

Need for Professional Development Schools

The term "professional development school" was conceived by the Holmes Group in the mid-1980s. Similarly, other collaborative efforts between universities and schools were identified as "professional practice schools" or "partner schools" (Holmes Group, 1986, 1990; Levine, 1992; Osguthorpe, Harris, & Black, 1995). While many of the definitions of these partnerships overlapped, there was not an

agreement on definition of these collaborations until the late 1990s. In 1997, NCATE published draft standards for professional development schools. It was these standards, after field-testing, revisions, and publishing (NCATE, 2001) that provided the basis for defining what a PDS is and what characteristics exemplify professional development schools. A professional development school has been defined as an innovative institution formed through partnerships between professional education programs and P-12 schools with a mission of professional preparation of teacher candidates, faculty development, inquiry directed at the improvement of practice, and enhanced student learning (NCATE Standards, p. 1). Students are increasingly expected to know more, have deeper understandings of content matter, develop more acute skills, and be capable of demonstrating whey they have learned and what they can do. While school restructuring and standards reforms have been widely utilized, these approaches have not been sufficient. Focus has shifted to improvement of teacher quality.

Classroom teachers and teacher preparation institutions have identified a gap between research and practice. Teachers and university personnel in professional development school settings seek to build the bridges that allow schools and universities to benefit from this mutual relationship. In contemporary debates on the quality of teacher preparation programs, the professional development school model has been identified as a highly acclaimed model of teacher preparation (Book, 1996).

Specifically, this review of literature examines the following aspects of this PDS: (a) professional development schools historically, (b) purpose, characteristics

and growth, (c) benefits for classroom teachers, (d) benefits for teacher candidates, (e) benefits for students, and (f) challenges of PDS programs.

Historical Perspective

Partnerships between public schools and teacher education institutions have existed in many forms since the later part of the nineteenth century (Stallings & Kowalski, 1990). John Dewey, the American educational philosopher who established the intellectual foundation for the Progressive education movement, opened a "laboratory school" at the University of Chicago in 1896. Dewey's school, following the influence of Francis W. Parker's practice school (Campbell, 1967) and the medical training model developed by Flexner (1910) focusing on clinical experience, stressed experimentation to test his theories and their sociological implications. When in 1904, Dewey left the University of Chicago for Teachers College, Columbia University, the laboratory school "had become the most interesting experimental venture in American education; indeed there were those who insist that there has been nothing since to match it in excitement, quality, and contribution" (Gutek, 1997). The laboratory school movement expanded and contracted from those beginnings until the mid 1970s. Eventually university laboratory schools became viewed as not typical of regular classroom settings. The student populations were made up of high percentages of faculty children. The research findings discovered there could not be generalized to public school settings and the cost of operating laboratory schools became overwhelming for universities to continue operation because of most laboratory schools not receiving equivalent funding with the public schools (Stallings & Kowalski, 1990). Today's professional development school sites receive the same

amount of funding from the government as any other school (Colburn, 1993) alleviating some of the financial burden. Additionally, many early professional development schools had the support of corporate foundations. One foundations director stated that, "progress could be made only if the problem were attacked at both ends: in the classroom, where teachers and students interacted, and in the universities, where future teachers were preparing for their careers" (Richardson Foundation, 1993). In a report for the Gheens Foundation (Kyle, 1993) John Dunlop asserts that there is a great appeal in professional development schools because of the potential for "coherent systematic change".

Klaumeier (1990) traced the previous four decades of school reform and connects the professional development school movement as an "evolutionary response" to reports such as *A Nation at Risk*, a quality review of education in the U.S., published in 1983. This publication addressed problems facing education in America and made recommendations to end the perceived decline (Toner, 1996).

Tomorrow's Teachers, the Holmes Group report brought about the development of the concept of the Professional Development School (PDS). The Holmes Group view of the PDS is as a program to provide a place where novice teachers can learn while also allowing for continual research and professional development (Hooks & Randolph, 2004). The Professional Development School concept is based on the medical training model developed by Flexner (1910) in the early part of the 20th century. This model utilized John Dewey's belief that individuals need experience and practice in order to develop understanding. With Dewey's

(1904/1974) theory as a template, Flexner implemented his medical training model focusing on clinical experience as a method of learning.

The Holmes Group viewed the PDS as a place where novice teachers could continue learning while allowing for continual research and professional development (Holmes, 1990). In the follow-up reports, *Tomorrow's Schools* (1990) and *Tomorrow's Schools of Education* (1995), the Holmes Group argued specifically for professional development school establishment and criticized schools of education for insufficient efforts to link university teacher education preparatory programs with elementary and secondary public schools. Educational reform efforts consistently urge teacher education institutions to expose general and special educators to a greater number of field-based experiences (Darling-Hammond, 1996; Goodlad, 1984, 1990; Holmes Group, 1986, 1990, 1995).

Dixon and Ishler (1992) stated that the professional development schools are an outgrowth of the alternative certification movement, attempting to return confidence and credibility to teacher preparation programs in light of failing public confidence that has led 41 states to adopt alternative certification routes (Frazier, 1994).

Even though the Holmes Group seemingly disassociates itself from laboratory schools (Murray, 1993) and the differences between professional development schools and lab schools are listed by Levin (1990), Creek (1995) maintains that the connections are close enough to raise questions as to why the Holmes Group fails to "acknowledge the origins" of their newly founded ideas (p. 247). This conflict is resolved by MacNaughton and Johns (1993) suggesting that the professional

development school is evolutionarily a descendent of the laboratory school, due in part to the ongoing efforts to connect university and school teacher preparatory measures.

Field experience and student teaching experiences provide additional background into the evolutional roots of PDSs. Historically, there has been a loose connection between the most vital component of teacher candidate preparation—student teaching—and the university. Melser (2004) likened the supervision of teacher candidates by university supervisors to a "circuit rider" approach remarking that the supervisor travels from school to school with minimal contact with cooperating teachers and the teacher candidate (p. 31). Melser continued by asserting that the supervisor of teacher candidates in PDSs necessitates a restructuring of the traditional supervisory model, requiring the supervisor's assistance in the areas of research and planning staff development for the school faculty.

Purpose, Characteristics, and Growth

The professional development school movement has been advocated by many organizations including: The Holmes Group (1986; 1990; 1995), the Carnegie Forum on Education and the Economy (Brainard, 1989), the National Network for Education Renewal (Goodlad, 1994), the National Education Association (Robinson & Darling-Hammond, 1994), and the American Federation of Teachers (Levine, 1992).

PDS programs serve four essential purposes. Many organizations and advocates state these purposes in a myriad of wording, however, the purposes of the PDS remain constant.

The first purpose is to improve the education of teacher candidates. The second purpose is to provide professional development for current educators. Thirdly,

PDSs are to improve student learning. Lastly, professional development schools should improve educational practices through research and collaboration (Tyson, 1997). The National Council for Accreditation of Teacher Education (NCATE) states in the standards for a PDS that the mission of this partnership should be professional preparation of candidates, inquiry directed instruction, faculty development, and enhanced student learning (p. 1).

According to Levine (2002) Professional Development Schools are partnerships formed by teacher education programs and preK-12 schools intent on sharing responsibility for the preparation of new teachers, the development of experienced faculty members, and the improvement of practice-all with the goal of enhancing student achievement. Having such a variety of purposes with one ultimate goal calls for each entity comprising the PDS to approach their individual and mutual purposes without losing sight of the end goal of improving student achievement. This partnership seeks to pool the knowledge, skills, and resources of higher education institutions and preK-12 schools and bring them to bear collectively on teacher preparation and development and student learning. School faculty members bring their knowledge of practice to this partnership; university faculty members bring research knowledge and inquiry skills. A Professional Development School must strive to improve student learning (Thompson & Siegel, 2001) by allowing student learning to define the PDS curriculum and the direction of research and inquiry for teacher candidates and school and university faculty (Levine, 2002). This pooling of resources holds promise for improving education for both students and teacher candidates.

In little more than 10 years since the inception of the PDS, the PDS model has become a driving force for in-service and pre-service teacher development, and the partnerships between schools and universities continue to grow in number (Adair & Breault, 1999). According to Rice (2002) teacher education institutions across the nation are currently answering calls for reform through implementation of Professional Development Schools. Tyson (1997) wrote that in American education, nothing like the PDS model suggested in *Tomorrow's Teachers* had existed previously in American education. The idea of professional development schools, in the words of Tell (1999), is breaking new ground for public education.

As stated in NCATE Standards for Professional Development Schools (p. 6): PDSs have distinct characteristics. They are learning environment that supports candidate and faculty development within the context of meeting all children's needs. PDS partners are guided by a common vision of teaching and learning, which is grounded in research and practitioner knowledge. PDS partners share responsibility for professionals and students; they blend their expertise and resources to meet their shared goals. PDS partners hold themselves accountable, and they are accountable to the public for maintaining high standards for P–12 students, candidates, faculty, and other professionals. In order to accomplish their goals, PDS partners create new roles, responsibilities, and structures; they utilize their resources differently. Finally, PDS partnerships are committed to providing equitable learning opportunities for all, and to preparing candidates and faculty to meet the needs of diverse student populations.

There are five standards that address the characteristics of PDSs:

1. Learning community

2. Accountability and quality assurance
3. Collaboration
4. Equity and diversity
5. Structures, resources, and roles.

It is these distinctive characteristics that separate PDS programs from the previous laboratory schools in purpose and structure. The Holmes Group and other advocates of PDSs, while embracing these characteristics, have not taken a position advocating one particular pedagogical model or one specific scope and sequence for the PDS design (Murray, 1993).

Professional Development Schools have been established by a growing number of colleges and universities. In 1994, Darling-Hammond estimated that there were 100 PDS sites across the country. The amount of PDSs in the USA in 1998 was reported to be about 600 (Abdal-Haqq, 1998). More recently, a 2002 report of the 525 National Council for Accreditation of Teacher Education (NCATE) accredited institutions, 166 had PDSs, and many partner with multiple PDS sites continuing to increase the number nationwide. PDS partnerships are located in urban, suburban, and rural settings in at least 38 states and several other countries (Aviav & Clinard, 1996; Duquette & Cook, 1994; Gardner & Libde, 1995; King & Mizoue, 1993; Papoulia-Tzelepi, 1993). Maryland, Louisiana, and North Carolina have recently mandated that all public teacher preparation institutions initiate PDSs; several other states have considered similar policies (Odland, 2002).

Each PDS site and the relationships of the partners are unique. Many PDS partnerships add specific goals to meet the needs of the educational community they

are serving. Therefore, research to compare and contrast PDS sites is difficult to accomplish utilizing traditional experimental research (Clark, 1995; Sirotnik, 1988).

Benefits for Classroom Teachers

Ideally, college and university personnel involved in PDS settings become a part of the school community. Teacher candidates are typically clustered in these sites. This clustering allows for convenience in visitation to classrooms by university supervisors, opportunities for collaboration between supervisors and school personnel, and collaboration among teacher candidates. This greater accessibility permits university faculty to become more readily accepted into the school setting as a resource person for teacher candidates and classroom teachers. Since faculty members often supervise teacher candidates that have been students in the supervisor's pedagogy classes there is an enhanced opportunity to draw analogies between these methods courses and actual classroom experiences, and it permits opportunities for a growing, and nurturing relationship between the supervisor and the teacher candidates. Winitzky, Stoddart, and O'Keefe (1991) agreed by stating, "Of these many new reform efforts, a particularly promising approach is the Professional Development School, because it seeks to link the university and the public school, and by doing so, to better link theory with practice" (p. 2).

Classroom teachers within a professional development school setting receive a variety of benefits for their students and themselves. The one important benefit is the opportunity to work closely with university personnel. Lieberman, Darling-Hammond, and Zuckerman (1991) interviewed teachers to determine what staff needs should be addressed. The observation of one teacher, "We need more expertise…someone to

come and work with us for three or four workshops spaced out over the year." The commitment of university personnel to a PDS program affords school faculty the availability of the expertise needed to facilitate change to improve instruction. The classroom teacher's position is further professionalized by the new roles and responsibilities that are taken on while working in the PDS setting (Colburn, 1993).

The philosophical source of teacher professional development in the professional development school setting is based on the beliefs that teachers are the key to educational reform and renewal and the successful development and growth of each educator falls upon the need for continuing inquiry into practices. When asked about the importance of the role of the teacher in an educational setting Linda Darling-Hammond said:

My research and personal experience tell me that the single most important determinant of success for a student is the knowledge and skills of that child's teacher (Goldberg, 2001, p. 689).

James Banks has pointed out, there is sometimes a wide gap between academic knowledge in the disciplines and how the subject is taught in K-12 schools (Banks and McGee 1999). There is a need for teachers and teacher candidates to develop lessons and activities based on accurate content knowledge. Training teachers and teaching candidates to utilize and develop programs such as GEO-Teach, that stresses use of the National Standards in geography, as they "merge content with pedagogy" is a way to make more meaningful lessons to be presented to students (Doering, Egan-Barker, Johnson, Keen, & Lo, 1995, p. 524). Ball and Cohn (1999) determined four major areas of learning for future educators:

1. Content Knowledge
2. Pedagogical Knowledge
3. Understanding Diversity
4. Knowledge of the students needs.

McDiarmid, Ball, and Anderson (1989) stressed the necessity for an in-depth perception of content knowledge. "Flexible understanding of a subject entails the ability to draw relationships within the subject as well as across disciplinary fields and to make connections to the world outside of school (p. 193). Therefore, McDiarmid et al. (1989) advocated teachers and teacher candidates should initiate flexible learning experiences that guide students toward this development.

As an example, many elementary teachers and teacher candidates have a limited acquaintance with the social sciences in college, perhaps having taken a few courses (Thornton & Wagner, 1990). Different elementary teachers have studied different aspects of social sciences. In essence saying, there appears to be scant social science subject matter knowledge that all American elementary teachers hold in common, and that which they have studied is unlikely to have been in depth. Hence, the need for continuing professional development of content knowledge is evident, along with the methodology to appropriately deliver that knowledge in meaningful planned lessons. The purpose of inquiry based methodology is not only a purpose of PDS as stated in the NCATE Standards (p. 1), but reverberates the philosophy of John Dewey (1936) when he stated,

> It is a cardinal precept of the newer school of education that the beginning of instruction shall be made with the experience learners already have; that this experience and the capacities that have been developed during its course provide the starting point for all further learning. (p. 74)

A portion of the philosophical approach in PDSs is that classroom educators take greater responsibility in their own professional development. This is commonly accomplished through attendance and presentations at conferences, visitations to other schools, and workshops for teacher candidates and other classroom teachers. By grasping hold of their own professional development teachers in a PDS must clarify what they believe and be capable of articulating this knowledge to teacher candidates. "As teachers become mentors and teacher educators, as they assume greater responsibility for the collective profession, they also become more comfortable with the notion that seeking and leading collective improvements in practice are aspects of a professional role" (Darling-Hammond, Cobb, & Bullmaster, 1995, p. 19). In PDSs, top-down, mandated, in-service training workshops are often replaced by flexible, teacher-initiated workshops. Sandholtz (2001) examined what teachers participating in a PDS program perceived as valuable in-service opportunities. The most valuable for the teachers were those associated with school/university partnerships. The least valuable were school based. This teacher's comment reflects the view of many expressed:

> The (worst experiences) are the times where we are grouped together to generate reams of meaningless data in order to create some document that has little or no impact on my day-to-day existence in class. If in-services add more work without a direct and tangible benefit to my students, I don't see the value!

Commonly, in early PDSs, university supervisors and faculty would often conduct these workshops, but as partnerships have grown deeper, classroom teachers have increasingly assisted and led the organization and presentation of workshops (Teitel, 1996).

The effect of PDS on educational practices utilized in classrooms was the focus of Bullough, Kauchak, Crow, Hobbs, and Stokes (1997), Campbell, Strawderman, and Reavis (1996) and Shroyer, Wright, and Ramey-Gassert, (1996). These studies detailed the changes in the teaching practice (increased hands-on inquiry approaches, attitudes toward science instruction, and sense of efficacy in teaching science), self-reflection, and empowerment. Fountain, Drummond, and Senerfitt (2000) asked classroom teachers to "name and describe one to three ways [the PDS] has influenced your classroom practice" (p. 8). Seven themes were identified: collegiality, experimentation and risk taking, reflectivity, multicultural sensitivity, decision-making, ongoing inquiry, and commitment to teaching.

In identifying the aforementioned themes, one must be aware of the relationship of these themes to the school climate in which they were generated. Positive school climate has been found to be a vital component of effective schools validating earlier research findings (Lezotte, 1997). Positive school climate research examining attendance, emphasis on academics, classroom interruptions, personalization of instruction, student/instructor relationships, and time on academic learning verifies these as influences on schools settings (Edwards, 1995a, 1995b; Huff, 1995; Schoenstein, 1995). Lindelow, Mazzarella, Scott, Ellis, and Smith (1989) maintained that school climate is the feeling one experiences in a school. Chamberlain (1971) contended that a "subtle spirit" as perceived by teachers and students is the definition of climate.

There is a strong connection between learning and instructional climate. Buckman, King, and Ryan (1995) identified the qualities of communication, trust,

openness, and teachers' shared support as factors linked to student learning, job satisfaction and improved performance for teachers. Improving student outcomes is influenced by school climate (Krug, 1992).

Petrosko and Munoz (2002) found that changes in teacher beliefs, perceptions of school climate and observable behaviors were attributable to the PDS environment. Observers of the teachers in the study focused their reports on classroom environment and teaching methodologies, use of curriculum materials, higher order thinking, hands-on instruction, and types of questioning strategies. The strongest differences in classroom practices were found to be in classroom environment and instructional quality. Additionally, the PDS teachers in the study reported having a "common vision regarding goals" being part of a culture that "encourages faculty to continue their professional development" and in encouraging faculty to "teach for understanding and higher order reasoning" (p. 17).

Benefits for Teacher Candidates

At the source of most literature regarding PDS is the need to provide teacher candidates with some sort of enhanced experience. In a PDS, teacher candidates have their field experience placement and student teaching assignments within the same school building, where they have the opportunity to gain an understanding of the culture of their school setting. They can become well acquainted not only with their cooperating teacher, but also with numerous faculty members, administrators, office personnel, and the custodial staff. Because they are in one building they do not lose time learning a variety of school rules and procedures because of being relocated from one building to another. Instead they become acclimated to this setting. This

difference from traditional teacher preparation is a vital part of the professionalization of teaching (Darling-Hammond, 1994). Part of this professionalization implies that teachers would be socialized, thus realizing a different conception of the role of the teacher and the purpose of schools.

With this acclimation to the PDS setting, teacher candidates are then better able to work collaboratively with cooperating teachers and with other teacher candidates to provide students with deeper and richer educational activities (Berg, Grisham, Jacobs, & Mathison, 2000). Numerous references are made in the literature to the medical model of emersion. Also, many PDSs follow their placements with a year of residency. Zeichner and Miller (1997) convey the differences in experiences between PDS and traditional teacher preparation models by the following:

> The existing literature on SBS [School Based Studies] in PDSs has made it fairly clear that several significant changes are occurring in SBS as they become situated in Professional Development Schools. These include an increase in the amount of time spent by preservice teachers in schools, more planned and purposeful experiences for student teachers, a greater focus on the whole school as the placement site, an increased emphasis on collaboration among teachers and peers, greater access to university supervisors, a greater respect for teacher knowledge and more decision making about the program by school staff, and more access to workshops and seminars on mentoring student teachers for school staff. (pp. 37-38)

Tom Russell (1998) questions the general design of teacher education programs that reserve extended experiences in the schools for the last year or semester of teacher candidates' preparatory program. Current models that start with classes on theory followed by a practical experience give teacher candidates the impression "that we have no faith in new teachers' ability to learn from experience, and they do hear that implicit message" (p. 53). Russell believes that teacher training should begin and end with practical experiences. In this model, the university becomes a place to build

"on experiences in a broad range of ways, from swapping experiences to reinterpreting them and assembling resources to meet goals identified through experience" (p. 53).

Loucks and Hall (1979) developed a framework for examining the process of change. This Concerns-Based Adoption Model (CBAM) is a tool for continually evaluating reform efforts. The CBAM holds that people experiencing change, such as teacher candidates, evolve in the types of questions they ask and in their use of whatever the change is. In general, early questions and concerns are more centered on self. As teacher candidates become acclimated to their surroundings and more experienced, questions and concerns emerge that are more task oriented. Finally, when self and task concerns are for the most part resolved, the individuals experiencing change and growth can focus on impact. Educators may ask: Is this change or method working for the students? and Is there something that will work even more effectively?

Of note regarding studies of outcomes for teacher candidates is that most are based on self-reported data collected from a variety of survey instruments. These surveys, according to the literature, focus on self-perceptions of efficacy and readiness to teach. Several studies use surveys to illuminate changes in the student teaching experiences while some are directed to PDS program graduates to examine expertise, dispositions, and retention.

Philosophical attitudes of teacher candidates toward their profession were tracked by Telese (1996) by analysis of questions and responses prior to and following their field experience. Fountain (1997) followed by examining the attitudes of PDS graduates in North Florida as compared to other beginning teachers. The PDS

graduates expressed significantly different responses regarding establishment of learning communities, understanding the influence of environment on learning, and working collaboratively.

Changing traditional teacher preparation is certainly a key component for sites referring to themselves as PDSs. However, the concern that does emerge from this purpose is that from much of the early literature this change is where many PDSs begin and end. Shen (1994) stated that after interviewing several PDS cooperating teachers, many held the belief that most PDSs involved a yearlong site placement yielding more cooperating teacher involvement, more attention to matching teacher candidates to cooperating teachers, and greater on-site supervision. None of those interviewed verbalized the improved student learning or inquiry and research into best practices.

More recently, Runyan, Parks, and Sagehorn (2000) adapted a needs assessment questionnaire to compare developmental stages of PDS teacher candidates and traditional placement teacher candidates. The questionnaire was administered both before and after field placements for these Pittsburg State University (Kansas) students. The researchers found that the PDS teacher candidates were more aware of their need to develop skills necessary for sound teaching practices. This practice of reflection was an emphasis of Dewey (1933). He stated that he believes that learning takes place when teacher candidates have the opportunity to try out new behaviors and reflect on them. Kolb in Experiential Learning (1984) describes a learning model that is grounded in experience. Teacher candidates actively reflect on their experience to develop concepts and plans action by setting new goals and strategies for their

teaching. The cycle then repeats itself. During this reflective process, supervisors act as mentors, guides, and observers of the process to ensure that the teacher candidate does engage in personal reflection and planning. However, learning is in the hands of the teacher candidates. Using this model changes the university supervisor/teacher candidate relationship from authoritarian to cooperative, guided by the candidate's reflections and aided by the supervisor's questioning and observations.

Cruickshank (1987) stated that, "...students of teaching..." reflect on the act of teaching and become, in practice, more thoughtful, wiser teachers. They deliberate on their teaching methods rather than base decisions in planning on technique, impulse, tradition, or authority. The act of reflecting is more than bringing something to mind. Cruickshank (1987) continued by saying, "Teaching can be thought about and considered by means of meditation, musing, contemplation, pondering, deliberation, cogitation, reasoning, and speculation" (p. 82). Valverde (1982) places the topic in the form of a question, "What am I doing and why?" Moore (1979) insisted that the "theoretical teacher does what she does with a purpose" (p. 4). Valverde (1982) added that, "... reflection should be formative that is, periodic, constructive and deliberate" (p. 48).

Pine, Maloy, Seidman, and Ludlow (2003) evaluated three types of teacher preparation in the state of Massachusetts: traditional teacher preparation, professional development schools and an alternative state certification model named the Massachusetts Institute for New Teachers (MINT). All teachers surveyed completed their teacher preparation experiences in 2000 and were still employed as teachers during 2001-02. In their report, the authors described characteristics of each program,

methods of recruitment for each program, and details on specific program features that are unique from the others in the study. The data gathered indicated that there were clear connections between PDS and teachers holding increased perceptions about their preparation and effectiveness in the classroom.

The opportunity to have discussions and reflections of teaching practices is suggested by Wait and Warren (2001), utilizing the North Carolina Teacher Performance Appraisal instrument, to have contributed to improved rankings of educators in the first three years of teaching, particularly in the area of student behavioral management. After combining the scores from the first 3 years of teaching, statistical significance was determined. The authors put forward that the cooperating teacher/supervisor/peer support given in the PDS setting and the opportunity to participate in discussions and reflections of teaching may have influenced the vital dimension of student behavioral management, in particular affecting time on task and gains on standardized test scores.

Benefits for Students

Students in a PDS site receive the benefit of additional teachers, in the person of teacher candidates in the classroom. These additional teachers are then able to attend to questions more quickly, address behavioral concerns more readily, and bring additional expertise to meet the needs of each student. Teacher candidates in this PDS setting are encouraged to utilize inquiry-based instruction. This constructivist approach permits classroom teachers and teacher candidates to provide students with a variety of instructional methods as opposed to the teacher-centered approach found in

many classrooms. Students are thus exposed to a wider variety of teaching techniques allowing for utilization of their multi-intelligences (Gardner, 1983; 1991).

The relationship between student achievement and the PDS is muddled by the discrepancies found in literature regarding the appropriateness of assessment instruments being utilized and the relationship of changes facilitated by PDS and the scores. Early studies of the effect of PDS on student outcomes provided data that documented gains in student test scores, but failed to provide information about the types of changes in teaching and learning taking place (Teitel, 1996). More recent studies continue to focus on test scores, but also provide data to make logical connections between changes taking place in PDS sites and the outcomes for students. Ross, Brownell, Sindelar, and Vandiver (2000) claim that researchers are slow to examine the relationships to student learning because they are skeptical regarding the adequacy of achievement tests to measure PDS outcomes.

In 1999, the Benedum Foundation hired the Rand Corporation to study the impact of PDSs partnered with West Virginia University. The Rand Report (Gill & Hove, 2000) examined gain scores and found those of PDS students to be consistently higher at all grade levels, and in all subject areas, especially math. Houston and others (1999) utilized classroom observation of randomly selected teacher candidates and documented that students in PDS classrooms had more time on task, were more consistently on task, and participated in a greater amount of small group activities than whole class instruction. Student scores from this partnership between the Hillcrest Professional Development School and Baylor University in Waco, Texas, did not

provide comparison data, but over a period of 5 years (1993-94 to 1997-98) showed impressive gains for the total school population.

Pine (2003) reports longitudinal data from a single professional development school in Michigan. Longfellow Community Elementary School in Pontiac, Michigan, after a dip in test scores during the first year of the program rose to meet and exceed state and regional average scores. The author utilized minutes from PDS Coordinating Council and School Improvement Team meetings to demonstrate a relentless focus on increasing student learning. Similarly, Frey (2002) provides examples of collaboration between Carpenter Middle School and San Diego State University with emphasis on the changed roles and structure caused by the PDS, which led to student gains. She demonstrates how the framework of the NCATE PDS Standards affected the engaging experiences students were exposed to in this study. Another primarily qualitative study, also examining the processes in a PDS brings to light the benefits to students produced by teacher candidates (Brink and others, 2001). This PDS partnership in a suburban Pacific Northwest district provided help for students through after-school tutoring, increased motivation through the integration of arts into content areas, and by use of their interests and talents. Brink details the gains made for students in the following areas: time management skills, confidence in mathematics, better writing in student journals, but focused on the increases in learning through the use of test scores.

Castle and Rockwood (2002) report in a longitudinal study (three years) scores indicating gains on all three reading tests, and on one of the two writing tests administered. Moreover, the authors link curriculum innovations taking place in the PDS (flexible grouping and professional development) and document how the PDS

had affected the methodologies of the classroom teachers. They specifically describe how the PDS environment facilitated teacher learning and altered practices to contribute to the gains of the students.

Recent reports from Kansas State University and its partnered schools demonstrate clear connections between gains in student learning and the degree of PDS status as described in the NCATE PDS Standards (2001, pp. 6-7). Kansas State University presently has a network of 25 PDS sites in five school districts. These sites represent rural, small town, and inner city environments. In a longitudinal study conducted by Yahnke and colleagues (2003), student scores on state achievement tests in mathematics were studied. Included in the data was the period of time each school had been a PDS as well as varied levels of faculty engagement. Researchers cite data indicating PDSs regularly outperforming the state average scores in mathematics. In examining student scores as they are related to length of time the school had been a PDS and levels of faculty engagement, it became clear that faculty engagement was more important to student success than longevity of the PDS.

Adair and Breault (1999) claim, "a PDS should not exist for the benefit of only one of the partners" (p. 3). All partners should gain from the experience. Benefits of PDS were found to be improved teacher education, collaborative community, continuing education, exemplary education, research/inquiry, and miscellaneous. A comment that captured the partnership that had developed in one PDS was expressed as "our relationship continues to evolve and get better." Benefits gained were specifically responded to with "my professional growth," "the professional rewards," and "all personnel benefiting." The study found that "the impact seemed to touch not

only teaching practice and student achievement, but the climate and essence of the school" (p. 18). One individual wrote of "creating schools of hope" (p. 18).

Challenges of PDS Programs

Professional Development Schools face numerous challenges in establishing partnerships and in maintaining collaborative initiatives. Goodlad, Darling-Hammond, Clark, Petrie, and Abdul-Haqq describe challenges eminent for each PDS. They are presented in the following descriptions:

1. Institutional Collaboration: The joining of professionals from differing institutions to form a community of learners dedicated to working to develop exemplary programs and schools.

2. Allocation of Resources: Finances, facilities, instructional resources, and time are needed to support activities and to supplement the changing roles of the professionals within the collaboration.

3. Redefining of Roles: Teachers, teacher candidates, and university personnel strive to provide exemplary programs and training to future and present teachers. Teachers and university personnel are viewed as equal partners, with roles evolving from traditional models.

4. Research and Inquiry: Teachers, teacher candidates, and university personnel are actively involved in research and inquiry related to specific school needs.

Kochan (1997) states that some problems have been identified in creating PDS initiatives. Included in these problems are the following: "a lack of time, funding, and personnel resources; policy constraints; conflicts in the cultures that inhibit

communication and the ability of individuals to work together effectively" (p. 3). Respondents to Kochan's question in 1997 of "what is your greatest frustration" in addressing the problems of PDS programs cited slow progress as the greatest source of frustration at 41%. In descending order, also noted were lack of time, lack of commitment, lack of support, lack of documentation, and miscellaneous.

Lieberman, Darling-Hammond, and Zuckerman (1991) identified team building as an essential element in the restructuring of schools. Finding time for change, having manageable initial projects and utilizing facilitators with opportunities for training and for retreats was stated as critical components for successful restructuring efforts. The movement to develop "a rich learning environment for teachers as well as students" (p. 3) was addressed as another important component to restructuring efforts.

Marsh Levine (1992), Director of the PDS Standards Project, stated that professional development schools would not achieve their full potential until "university folk care as much about the learning of school students as school folk do." The accountability pressures, increased emphasis on testing, the regulations of "leaving no child behind" all add to the internal strains of those working in PDSs to insure that their presence and efforts do make a difference.

Elizabeth Hess Rice (2002) utilized meta-ethnography research in a study from 1990-1998 from which emerged 12 themes as issues in the collaboration process. The themes are as follows: (a) the unwillingness to collaborate, (b) prior relationships and attitudes affect the PDS, (c) difficulty sustaining funding, (d) lack of formalization, (e) issues of parity and control, (f) the importance of the principal, (g) miscommunication,

(h) intraorganizational strain, (i) conflicting goals between organizations, j) initial distrust and skepticism, (k) the importance of key individuals, and l) the importance of informal meetings (pp. 58-63). Rice continued by offering the following six recommendations for building successful PDS programs, which are suggested as actions for improving the collaborative process (p. 64).

The first recommendation is to begin partnerships between universities and schools as voluntary endeavors. This is related to Fullan's (1993) mindset for change that changes in education must not be mandated for mandated changes have in the past overwhelmingly failed in education. Therefore, PDS partnerships must be through invitation.

The second recommendation is to utilize outside resources for sustaining funding. Attention should be paid to how funding will be sustained in the PDS (Abdal-Haqq, 1998; Clark, 1995).

The third recommendation is to formalize the PDS structure that written policies and procedures will aid the collaboration process.

The fourth recommendation is to have informal meetings and gatherings. These will establish trust and build camaraderie between participants.

The fifth recommendation is to allow time to build a shared vision of the PDS. Taking the time to establish a shared vision will add to the collaboration process (Rice, 2000).

The sixth recommendation pertains to continued research in the area of collaboration. The realm of teacher education must continue to examine case studies of PDS sites, as they are available.

Summary

Information regarding Professional Development School programs and research into many of the factors that influence the efficiency and effectiveness of these programs is abundant. Professional Development Schools are a relatively new concept in American education. However, there appear to be a decreasing number of universities and colleges that have not at least attempted to establish and maintain these partnerships.

The pendulum swing of reform was characterized by Slavin (1989) by the assertion that such reforms typically possessed "early enthusiasm, widespread dissemination, subsequent disappointment, and eventual decline" (cited in Petrie, 1995, p. 103). Because of the complicated and peculiar characteristics of each PDS site transforming PDS theories and concepts into practice have run into what have become predictable problems (Petrie, 1995).

The literature on Professional Development Schools indicated that partnerships are increasing in number as the PDS is increasing. Partnerships are not only initiated from university to school setting, but state departments of education as recently are mandating more university/school collaborations be established. The literature points out successful partnerships that have proven beneficial to at least one of the participants. Of note is the variety of settings from which the research emanates. The uniqueness of each collaboration structure and setting makes it difficult to generalize findings to other settings and populations. Additionally, several practical obstacles to partnerships were illuminated in the literature.

The literature on Professional Development Schools continues to grow. The majority of the studies focused on teacher candidates' attitudes and beliefs about teaching. Abdal-Haqq (1998) discussed more recent literature that provided a focus on the processes and activities of the PDS; but notes that there remains a lack of studies documenting outcomes for schools and the students within them.

Whatever form a PDS may eventually grow into the purposes are constant: to enhance the professional preparation of teaching candidates, to serve as a platform for faculty development through the encouragement of inquiry directed instructional practices, and a Professional Development School must strive to improve upon student learning.

CHAPTER III

PROCEDURES

Research Design

This research focused on the efficacy of using a professional development school model as a means of providing an enriched student teaching experience, to increase student learning outcomes, examined changes in teacher attitudes and teacher candidate development as measured by reflective journal entries. The mixed methods design used in this study used a variety of methodologies to answer the appropriate questions (Newman & Benz, 1998). As stated by Ridenour and Newman (2004), "one can mix methods to address different components of the same study," thus utilizing one method to inform the other (p. 11).

The use of mixed methods was dictated by the identified purpose of the study: to examine the overall effectiveness of the professional development school program in a particular site. Mixed methods was an appropriate design because of the various aspects (both qualitative and quantitative) of a professional development school that must be examined. This design was selected to comprehensively analyze not only the effects of the PDS classroom on student achievement utilizing the Iowa Test of Basic Skills, but also to gauge the relationship of school climate as measured by the National Association of Secondary School Principals (NASSP) School Climate Survey and the PDS setting as perceived by the classroom teachers in this setting and to identify the

setting's influence on the self-analysis of teacher candidates through their reflective journals. Specifically, this study investigated the effect of a Professional Development School classroom setting on the achievement of regular education elementary students as compared to the achievement of regular education elementary students in a traditional classroom setting. This study also examined the effect of this particular professional development school setting on the teachers' perceptions of school climate using the National Association of Secondary School Principals (NASSP) School Climate Survey. Reflective journals of teacher candidates within this setting were also analyzed to assess the development of common themes in teacher candidate reflections. This examination of reflective journals was completed to gain an understanding of the effect of the PDS setting on teacher candidates' constructs of planning, instructional methodologies, effectiveness of instruction, assessment of students' learning, and classroom management techniques. Additionally, the researcher conducted a reliability check using three reflective journals in his possession. The researcher determined that the submissions provided by teacher candidates from these journals did correspond with his identification of keywords. These constructs were compared and contrasted to The Concerns-Based Adoption Model (Loucks & Hall, 1979) that identifies the themes of change as being: awareness, informational, personal, and management, consequence, collaboration, and refocusing.

An ex post facto design was utilized because of the researcher's inability to manipulate the independent variables. Newman and Newman (1994) wrote that ex post facto research is research that is initiated after the occurrence of the event or when

the independent variable cannot be manipulated such as sex, race, highest degree earned, etc.

The research design having been ex post facto does not control the independent variable; causation cannot be inferred (Newman & Newman, 1994). Newman and Newman (1994) continued by stating that from an ex post facto design relationships among variables may be demonstrated.

Kerlinger and Lee (2000) wrote that ex post facto research

> is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables. (p. 379)

Ex post facto research, in a study has three major weaknesses: (a) the inability to manipulate independent variables, (b) the lack of power to randomize, and (c) the risk of improper interpretation, which is because of the lack of control (Kerlinger & Pedhazur, 2002). These weaknesses relate to the internal validity of the research. Internal validity, according to Newman and Newman (1994), is the extent to which one can say that the effects on the dependent variable are caused by the independent variable. Regardless of the inability to determine causation from utilizing an ex post facto approach, the ability to determine if relationships can exist among variables can be very useful to researchers when one is trying to build a systematic argument that is data based.

PDS Program Description

Each PDS site and the relationships of the partners are unique. Therefore, research to compare and contrast PDS sites is difficult to accomplish utilizing traditional experimental research (Clark, 1995; Sirotnik, 1988).

Acknowledging the uniqueness of each PDS site then requires the research to be limited to examining each PDS partnership individually to determine the impact on student achievement, teachers' perception of school climate, and teacher candidate preparation reflections.

The site being examined in this research was chosen because of its availability. This 2-year longitudinal study occurred during the first 2 years of the PDS program. During the time period being examined 22 teacher candidates (11 each academic year) participated in the program. Teacher candidates were selected after completing the application form (Appendix A). Both university supervisors and administrators from the public school site reviewed the applications and jointly selected the university students. Teacher candidates are present in the elementary classroom setting to observe, assist, and teach 18 school days during the fall semester of the academic year. Spring semester requires teacher candidates to serve in two 8-week student teaching placements.

During these placements cooperating teachers and teacher candidates are released from the classroom on three school days for professional development. These professional development opportunities designed by a site steering committee comprised of university supervisors and cooperating teachers take place on the

university campus and address various aspects of partnership building and best practices (Appendix B).

Derivation of General Research Hypotheses and Specific Research Hypotheses

There is research from a variety of educational settings that supports the effectiveness of Professional Development School programs regarding student achievement (Brink, Grisham, Laguardia, Granby, & Peck, 2001; Castle & Rockwood, 2002; Frey, 2002; Gill & Hove, 2000; Houston et al., 1999; Pine, 2003; Teitel, 1996; Yahnke, Shroyer, Bietau, Hanclock, & Bennet, 2003). Additionally, literature supports the effectiveness of both inquiry directed instruction and increasing the number of instructors within the classroom (Castle & Rockwood, 2002; Gill & Hove, 2000; Pine, 2003; Yahnke et al., 2003). The literature summarized in Chapter II suggests that relevant variables to be looked at should include years of teacher experience, teacher educational background, and the sex of the teacher. Increased student achievement in the setting being examined in this study is the primary area of interest of this Professional Development School partnership, which includes the public school district and the participating university. Because of the increase of instructors in the classroom and the increased frequency of professional development opportunities, the investigator hypothesizes that this PDS setting will be positively correlated with an increase of student achievement on the Iowa Tests of Basic Skills.

The predictor and covariates in this study were the students' placements in a PDS setting, the students' scores on the pretest, the teachers' years of experience, the sex of the teacher, and the highest degree earned by the teacher. The criterion

variables were the students' achievement scores on the posttest and school climate scores from the NASSP School Climate Survey.

The following were the general research questions that generated the research hypotheses for this study:

1. Is there is a significant difference in the achievement scores of elementary public school students enrolled in classrooms that are participating in this Professional Development School program as compared to the achievement scores of elementary public school students in traditional classrooms as measured by the Iowa Test of Basic Skills when holding pretest scores constant?

2. Compared to traditional classroom settings, does the presence of a teacher candidate, coupled with additional professional development training for the classroom teacher, predict success as measured by standard scores on the Iowa Test of Basic Skills, when holding pretest scores constant?

3. Is there a relationship between program participation and student school attendance?

4. Does the presence of a Professional Development School setting relate to teacher perceptions of school climate as measured by the National Association of Secondary School Principals School Climate Survey (using the following subscales: teacher-student relationships; security and maintenance, student academic orientation; student behavioral values, student-peer relationships; and instructional management)?

5. What constructs or phrases can be inferred from the reflective journals of teacher candidates in a Professional Development School setting that indicate their change and growth as a teacher in field experience and student teaching placements

when compared to the Concerns-Based Adoption Model stages of awareness, informational, personal, and management, consequence, collaboration, and refocusing?

Variable List

The variables were encoded the following way:

Predictor Variables and Covariates

Pretest = the pretest score given as a standard score;

PDS = 1 if in the Professional Development School Program (treatment 1), 0 otherwise;

TCS = 1 if in the traditional classroom setting (treatment 2), 0 otherwise;

Years of experience = years of teaching experience of classroom teacher;

Male = 1 if male teacher, 0 otherwise;

Female = 1 if female teacher, 0 otherwise;

Bach = 1 if bachelor's degree as highest earned degree, 0 otherwise;

M.Ed. = 1 if master's degree as highest earned degree, 0 otherwise.

Pretest (School Climate) = school climate score derived from the NASSP School Climate Survey.

Criterion Variables

Posttest = student achievement in Reading, Language, Mathematics, Social Studies, Science, and Composite by standard score.

Posttest (School Climate) = school climate score derived from the NASSP School Climate Survey.

Research Hypotheses

The following research hypotheses were generated for the purpose of this study:

General Research Hypothesis 1. There is a positive relationship between regular education elementary students' Composite achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (composite) = $a_0u + a_1$Pretest (composite) + a_2PDS + a_3TCS + E_1

RM: Y Posttest (composite) = $a_0u + a_4$ Pretest (composite) + E_2

Specific Hypothesis 1A. There is a positive relationship between regular education elementary students' Reading achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (reading) = $a_0u + a_1$Pretest (reading) + a_2PDS + a_3TCS + E_3

RM: Y Posttest (reading) = $a_0u + a_4$ Pretest (reading) + E_4

Specific Hypothesis 1B. There is a positive relationship between regular education elementary students' Mathematics achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (mathematics) = $a_0u + a_1$Pretest (mathematics) + a_2PDS + a_3TCS + E_5

RM: Y Posttest (mathematics) = $a_0u + a_4$ Pretest (mathematics) + E_6

Specific Hypothesis 1C. There is a positive relationship between regular education elementary students' Language achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (language) = $a_0u + a_1$Pretest (language) + a_2PDS + a_3TCS + E_7

RM: Y Posttest (language) = $a_0u + a_4$ Pretest (language) + E_8

Specific Hypothesis 1D. There is a positive relationship between regular education elementary students' Social Studies achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (social studies) = $a_0u + a_1$Pretest (social studies) + a_2PDS + a_3TCS + E_9

RM: Y Posttest (social studies) = $a_0u + a_4$ Pretest (social studies) + E_{10}

Specific Hypothesis 1E. There is a positive relationship between regular education elementary students' Science achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences?

FM: Y Posttest (science) = $a_0u + a_1$Pretest (science) + a_2PDS + a_3TCS + E_{11}

RM: Y Posttest (science) = $a_0u + a_4$ Pretest (science) + E_{12}

General Research Hypothesis 2. The classroom teacher accounts for a positive relationship in predicting student achievement when controlling for pretest differences and type of school setting (PDS & TCS)?

FM: Y Posttest = $a_0u + a_1$Pretest + a_2PDS + a_3TCS + a_4Years of experience + a_5Bach + a_6M.Ed + E_{13}

RM: Y Posttest = $a_0u + a_7$ Pretest + a_8PDS + a_9TCS + E_{14}

Specific Hypothesis 2A. The years of experience of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills when controlling for pretest differences and type of school setting (PDS & TCS)?

FM: Y Posttest = $a_0u + a_1$Pretest + a_2PDS + a_3TCS + a_4Years of experience + E_{15}

RM: Y Posttest = $a_0u + a_5$ Pretest + a_6PDS + a_7TCS + E_{16}

Specific Hypothesis 2B. The highest level of educational degree earned of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills when controlling for pretest differences and type of school setting (PDS & TCS)?

FM: Y Posttest = $a_0u + a_1$Pretest + a_2PDS + a_3TCS + a_4Bach + a_5M.Ed. + E_{15}

RM: Y Posttest = $a_0u + a_6$ Pretest + a_7PDS + a_8TCS + E_{16}

General Research Hypothesis 3. There is a positive relationship in school attendance for students attending classrooms that are part of the professional development school program as compared to the traditional classroom setting?

FM: Y Attendance = $a_0u + a_1$PDS + a_2TCS + E_{17}

RM: Y Attendance = $a_0u + E_{18}$

General Research Hypothesis 4. The professional development school program, accounts for a positive relationship in predicting elementary school teachers' perceptions of school climate as measured by the NASSP School Climate Survey?

FM: Y Posttest (School Climate) = $a_0u + a_1$Pretest (School Climate) + a_2PDS + a_3TCS + E_{19}

RM: Y Posttest (School Climate) = $a_0u + a_4$ Pretest (School Climate) + E_{20}

Participants

The university in this partnership is part of a state-wide system of higher education. Founded 1889 as a normal school, the institution follows calendar semester, offers degrees at the bachelor's, master's, and doctoral levels. The 611-acre campus is a coed institution with over 6,500 undergraduate students: 91% full-time, 58% women, 42% men.

The public elementary school in this partnership is located less than one mile from the aforementioned university. The school is set within the borough boundaries. However, the student population also includes surrounding rural areas. The school population is comprised of approximately 400 regular education elementary students in 19 classrooms. The students live in a rural setting with a low-income rate of 23.4 % as indicated by the quantity of free and reduced lunches. Forty-six percent of the students are female, with 54% being males. More detailed information regarding the participants' socio-economic status and ethnic identity were not made available to the investigator by the local school district. School attendance is at a 94.6%. Students attend school for 183 days of instruction each academic year. The length of the school day in hours is 6.1.

The 38 teachers participating in this study were classified in two distinct groups. The first was comprised of those within this elementary public school setting that were not participating in the Professional Development School (PDS) program. The second was made up of those teachers in the same elementary school setting that were participants in the PDS program.

Overall, regular education classroom teachers in this PDS setting had taught on average 10.36 years in the grade that they were providing instruction and 19.8 years in their teaching careers. Over 60% (63.8%) of the teachers held at minimum a master's degree. Fourteen percent of the teachers eligible for participation in the PDS were male and 86% of the teachers eligible for PDS participation were female.

The teacher candidates in the program spent their field experience placement and student teaching assignments within the same school building. Teacher candidates were selected from a pool of applicants for the professional development school program at this site. Each teacher candidate had a minimum of a 3.0 grade point average and was enrolled as a full-time student at the partner university. Nine percent of the teacher candidates were male with the remaining 91% being female.

Sampling Procedures

All regular education first through fifth grade elementary students at the elementary building were a part of the study. Students were placed in the assigned classrooms by the building principal using recommendations from the previous year's teachers regarding ability (to be balanced), behavioral concerns, and parental requests.

During the first year of the PDS program teachers were selected for the Professional Development School program by university professors. Teachers selected

had previously served as supervisors of field experience and student teachers within this public school setting. The investigator was informed by school principal that each PDS teacher must have been a cooperating teacher previously and, according to school district policy, must be tenured. Beyond these criteria, the teachers had shown themselves, in the viewpoint of the university supervisors, to be supportive of teacher candidates and cooperative with university personnel.

In the second year of this longitudinal study, teachers meeting the previously stated qualifications and not selected as participants in the PDS program (because of the number of teacher candidates from the university) were insured an opportunity to participate if they wished to do so. This brought two other cooperating teachers into the program and eliminated two others from the initial year of the PDS program. One of the teachers eliminated voluntarily dropped from the program for the 2003-2004 school year. The remaining teacher from the initial year of the PDS program was not selected because of her pregnancy, which will result in a planned maternity leave for several months of the school year.

Teacher candidates were selected for this placement through an application process. Following a PDS presentation at an on-campus seminar to all prospective teacher candidates, university students were able to obtain and complete a PDS program application (see Appendix A) to be considered for this PDS setting.

Instruments

All students took the Iowa Tests of Basic Skills (ITBS), Form A. Purposes of this battery, as stated by Brookhart (2004), are:

> (a) to help teachers determine the extent to which individual students in their classes have the knowledge and skills needed to deal successfully with

> the academic aspects of the instructional program the teacher has planned; (b) to provide information to parents that will enable home and school to work together in the students' best interests; (c) to estimate the general developmental level of students so that teachers may adapt materials and instructional procedures to meet individual needs; (d) to identify each student's areas of greatest and least development for use in planning individual instructional goals and approaches; (e) to provide achievement information that makes it possible to monitor year-to-year developmental differences; (f) to provide information for making administrative programming decisions that will accommodate developmental differences; and (g) to identify areas of relative strength and weakness in the performances of groups (e.g., classes), which may have implications for curriculum change--either in content or emphasis—as well as for change in instructional procedures.

The ITBS has an estimate of high reliability coefficients for the most part. The ITBS prides itself on its reliability, claiming rightly that its reliability levels are among the highest in the testing industry. Most subtest reliabilities are in the .80s and .90s. Core Total and Composite reliabilities are all above .90.

The scores utilized in this study came from a variety of subtests. The Reading achievement battery is comprised of Vocabulary and Reading Comprehension subtests. The Language achievement battery is comprised of Spelling, Capitalization, Punctuation, and Usage and Expression subtests. The Mathematics achievement battery is comprised of Concepts/Estimation, Problems/Data, and Computation subtests. The five batteries: Reading, Language, Mathematics, Social Studies and Science give a combined score referred to as the Composite score.

Validity is the extent at which an instrument measures what it purports to measure (Lomax, 1992; McNeil, Newman, & Kelly, 1996; Newman & Newman, 1994; Wiersma, 1985). Content validity is the extent to which the items on a scale are representing the domain(s) of interest (Kerlinger & Pedhazur, 1973; McNeil et al., 1996; Newman & Newman, 1994; Wiersma, 1985).

The Iowa Tests of Basic Skills provides valid measures of basic academic skills if used in the manner intended. It is generally recognized that content validity is of paramount concern for standardized achievement tests and this must be judged at the local level by considering how well the test reflects the curriculum (Brookhart, 2004).

All teachers completed a questionnaire (see Appendix C) developed by the investigator asking for information regarding their years of experience in the teaching profession, the highest level of degree completion in the field of education, and their sex. According to Gaul, Gaul, and Borg (1999) as much descriptive data as possible about the experimental and control groups should be reported, such as the location, socioeconomic levels, teachers' experience level, teachers' level of educational training, and sex of the teacher. This descriptive data helped clarify the degree of similarity between the control and experimental groups. The utilization of a quantitative design employs statistical methods that provided an objective perspective of the data gathered. The investigator developed a questionnaire to gain access to the teachers' information regarding the variables that concern differences in their backgrounds and experiences. A panel of expert judges, including school district administrators and university professors involved in providing supervision within this PDS setting, was utilized to establish the validity of this survey instrument. Information regarding the purpose of the survey was shared with the expert judges followed by an opportunity for feedback regarding the appropriateness of the proposed survey instrument.

The instrument used in this study to assess the school climate as perceived by teachers was the NASSP School Climate Survey developed at the University of

Nebraska-Lincoln. The instrument is comprised of six subscales that are indicative of the research correlating positive school climate with student achievement improvements. This instrument was employed to measure any change in teachers' perception of school climate during the length of this study.

The NASSP School Climate Survey, as determined in pilot and normative studies, has an average internal consistency reliability of the subscales of 0.81, from a range of 0.67 to 0.92 (NASSP, 2001).

During pilot studies of the NASSP School Climate Survey, climate items were field tested. Items found to be redundant or ambiguous were excluded or revised. The data derived from the field studies guided the subsequent drafts of the NASSP School Climate Survey.

Construct validity is, according to Newman and Benz (1998), an estimate of how well the instrument is measuring the underlying construct it is attempting to measure. Thus, construct validity is an abstraction and not a directly observable account of measured behaviors. School climate is such an observable behavior. The task force that reviewed the field testing and performed factor analyses determined that the NASSP School Climate Survey has strong construct validity.

Data Collection

The investigator collected data regarding the public school elementary regular education students' classrooms from October 2002, May 2003, October 2003, and May 2004. The achievement battery of standardized tests was administered in a group setting by the regular education classroom teachers. The assessments were taken by students over a 4-day period. The Reading portion of the testing requires 70 minutes.

Language tests are 66 minutes in length. Mathematics requires 70 minutes to administer. Social Studies and Science each receives a time allotment of no more than 30 minutes. The Composite score combined length can be up to 4 hours and 26 minutes for each administration of the Iowa Tests of Basic Skills.

National Association of Secondary School Principals surveys were completed by all regular education classroom teachers in the fall of 2002 and this measure was repeated in the spring of 2004. Surveys were completed in a group setting to insure clarity and consistency of instructions for all participants. The questionnaire completed by regular education classroom teachers was completed in the fall of 2002 and repeated in the spring of 2004.

Teacher candidates were directed to analyze their reflective journals to assess the development of common themes in teacher candidate reflections. The analyses were divided into three distinct areas: (a) reflections during field experience placements; (b) reflections during first student teaching placements; and (c) reflections during second and final student teaching placements. Reflections were collected in the fall of 2004 and the spring of 2005. Each journal contained daily reflections of the teacher candidates' PDS placement experiences. The researcher conducted a reliability check using three reflective journals in his possession.

Statistical Treatment

This study used descriptive and inferential statistics. Multiple linear regression (the general linear model) was utilized to test the specific research hypotheses because with multiple linear regression it is possible to deal with categorical as well as continuous variables (McNeil, Newman, & Kelly, 1996) making this procedure more

flexible that traditional analysis of variance. Regression models were written for each specific research hypothesis (Cohen & Cohen, 2003; Kerlinger & Pedhazur, 1973; McNeil, Newman, & Kelly, 1996). Both restricted and full models were then tested to determine if each specific research hypothesis was significant or should be rejected.

An F test (McNeil, Newman & Kelly, 1996), analysis of variance, was employed to test the statistical significance of the proposed relationships with an alpha level of .05. The F test was chosen because it is very robust.

For variables where the correlation direction was uncertain, two-tailed tests of significance were utilized to test the relationships of variables.

A power analysis with an effect size of $f^2 = .15$ (medium size effect), as defined by Cohen and Cohen (2003), was employed (McNeill et al., 1996) yielding a .62 power.

Teacher candidate reflective journals were collected and analyzed for three time periods of their PDS placements: (a) reflections during field experience placements; (b) reflections during first student teaching placements; and (c) reflections during second and final student teaching placements. Common themes for each placement were identified through keyword searches.

Limitations

Although the Iowa Test of Basic Skills was administered on four separate occasions and an informational teacher questionnaire was completed the data does present some limitations. First, the number of teachers participating in this study was limited because of the size of the elementary school building. Second, responses to the questionnaire were inexact. They do not differentiate between one master's degree

area and another. The questionnaires do not give credit for any graduate work beyond an undergraduate degree, but not completing a master's degree or a master's equivalency. Additionally, the questionnaire does not differentiate between how long a teacher has been educating students in this building or within the same school district. Age of the teacher was also not taken into consideration. Furthermore, the experiences of teacher candidates working with children, while part of the application process for the professional development school program, were not given consideration in analyses of reflective journals. Lastly, the researcher was provided by the school district with standard scores in reporting results of the Iowa Tests of Basic Skills, when raw scores would have given a more accurate reflection of student achievement.

Summary

In order to more fully understand the relationship between Professional Development School settings and regular education elementary student achievement, this study utilized a mixed methods design. Through teacher questionnaires and the Iowa Tests of Basic Skills achievement batteries, a linear regression model was applied in full and restricted models measuring significance of student achievement in the areas of Reading, Language, Mathematics, Social Studies, Science, and a Composite Total (combining the previous five areas) with a .05 alpha level for each regression. NASSP School Climate Surveys were used to determine the effect of this professional development school setting on teacher perceptions of school climate. Additionally, reflective journals of teacher candidates were self-examined to gain insight into the relationship between this PDS setting and teacher candidates'

perceptions of planning, instructional methodologies, effectiveness of instruction, assessment of students' learning, and classroom management techniques.

CHAPTER IV

RESULTS OF THE STUDY

Results of the research are presented in this chapter. Chapter IV is organized into four sections: correlation matrix, descriptive statistics, inferential statistics, and representative selections from teacher candidate reflective journals. Descriptive statistics such as minimum and maximum values and means represent the demographic variables. Inferential statistics were utilized to test the research hypotheses. Teacher candidate reflective journal samples were self-selected to represent keywords repeatedly identified during reflections of placements in this professional development school program.

Correlation Matrix

A correlation matrix was run to demonstrate the intercorrelations of the PDS setting (treatment) and the NASSP School Climate Survey subscales (raw scores and gain scores) and the relationship of student achievement (standard and gain scores) to the professional development school setting (see Appendix D).

Results show that the NASSP subscales are correlated and therefore not independent of each other. This finding supports the assumption that all of the subscales measured one underlying construct, School Climate.

After computing variables (posttest minus pretest), the researcher entered and analyzed the Iowa Test of Basic Skills gain scores in the professional development school setting (coded as 1 if PDS; 0 if TCS) as compared to the traditional classroom setting. Results showed a positive, but not significant, relationship between PDS setting and student achievement on the following tests: composite, reading, mathematics, language, and social studies. The researcher also computed variables (posttest minus pretest) to determine gain scores for the NASSP School Climate survey instrument. After entering and analysis it was determined that significance was found for the following subscales: student academic orientation, student behavioral values, student-peer relationships, instructional management, administration, and student activities. Additionally, a positive, but not significant, relationship was found for the subscales of teacher-student relationships and parent and community-school relationships.

Descriptive Statistics

Teacher Demographic Information

Demographic information was obtained by having the teacher participants fill out the questionnaire titled *Teacher Survey* (see Appendix C).

A total of 38 surveys were distributed to all classroom teachers in the participating elementary school. Each teacher responded to the survey yielding a 100% rate of return (see Tables 1 and 2).

Table 1

Descriptive Statistics

Variables	N	Min./Max.	Mean	Std. Dev.
Professional Development School Teacher	22	0*	1*	.5789
Traditional Classroom Setting Teacher	16	0*	1*	.4211
Bachelor's Degree as Highest Degree Held	15	0*	1*	.395
Master's Degree as Highest Degree Held	23	0*	1*	.605

Note. *Min/Max (1 if in treatment group; 0 if not in treatment group)

Table 2

Frequencies

	Categories	Frequencies	Percent	Cumulative Percent
Teacher Type	PDS	22	57.90	57.90
	TCS	16	42.10	100.00
		Total	38	100.00
Years of Experience	PDS	2 years 1	2.6	2.6
		10 years 1	2.6	5.3
		11 years 1	2.6	7.9
		12 years 1	2.6	10.5
		16 years 1	2.6	13.1

(*table continues*)

Table 2 (continued)

	Categories	Frequencies	Percent	Cumulative Percent
		17 years 1	2.6	15.8
		18 years 1	2.6	18.4
		19 years 1	2.6	21.0
		20 years 1	2.6	23.6
		21 years 2	5.3	29.0
		22 years 1	2.6	31.5
		24 years 1	2.6	34.1
		25 years 1	2.6	36.8
		26 years 2	5.3	42.0
		27 years 1	2.6	44.6
		28 years 1	2.6	47.3
		29 years 2	5.3	52.5
		30 years 1	2.6	55.1
		35 years 1	2.6	57.9
	TCS	1 year 3	7.9	65.8
		5 years 1	2.6	68.4
		10 years 1	2.6	71.0
		11 years 1	2.6	73.7
		12 years 1	2.6	76.3
		13 years 1	2.6	78.9
		14 years 1	2.6	81.6
		15 years 2	5.3	86.8
		17 years 1	2.6	89.4
		18 years 1	2.6	92.0
		32 years 2	5.3	97.3
		34 years 1	2.6	100.0
		Total	699	100.0
Bachelor's Degree	PDS	8	21.1	21.1
	TCS	7	18.4	39.5
Master's Degree	PDS	14	36.8	76.3
	TCS	9	23.7	100.0
		Total	38	100.0

Research Hypotheses Results

This section reviews the statistical results as well as presents the findings in table format of the research questions and hypotheses. The research hypotheses were tested using multiple linear regression. The alpha level was set at .05.

General and Specific Hypotheses

General Research Hypothesis 1 (GH1). General Research Hypothesis 1 predicted that there is a positive relationship between regular education elementary students' Composite achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was not found to be significant. The F Change score equaled .026 with df_1 equal to 1 and df_2 equal to 35. This produced a p equal to .873 and an R square change (R^2_{Change}) equal to .000 (see Table 3).

Table 3

General Research Hypothesis 1

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(composite) = 3.545 + (1.056) Pretest composite + E	.989	.977			
Full	Posttest(composite) = 3.617 + (1.056) Pretest composite + (-.241) TCS + E	.989	.977	$.026_{1,35}$	.873	No

Note. Alpha is <.05; TCS coded 1; PDS coded 0
General Research Hypothesis 1. There is a positive relationship between regular education elementary students' Composite achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

Specific Research Hypothesis 1A. Specific Research Hypothesis 1A predicted that there is a positive relationship between regular education elementary students' Reading achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was found not to be significant. The F Change score equaled .520 with df_1 equal to 1 and df_2 equal to 35. This produced a p equal to .476 with an R square change (R^2_{Change}) equal to .000 (see Table 4).

Table 4

Specific Research Hypothesis 1A

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(reading) = 12.262 +(1.016)Pretest reading + E	.985	.971			
Full	Posttest(reading) = 12.661 + (1.017)Pretest reading + (-1.177)TCS + E	.985	.971	$.520_{1,35}$	.476	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 1A. There is a positive relationship between regular education elementary students' Reading achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

Specific Research Hypothesis 1B. Specific Research Hypothesis 1B predicted that there is a positive relationship between regular education elementary students' Mathematics achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was found not to be

significant. The F Change score equaled .421 with df_1 equal to 1 and df_2 equal to 35. This produced a p equal to .521 with an R square change (R^2_{Change}) equal to .001 (see Table 5).

Table 5

Specific Research Hypothesis 1B

	Model	R	R^2	F $Change_{df1,df2}$	p	Signif.
Restricted	Posttest(mathematics) = .250 + (1.086) Pretest math + E	.984	.967			
Full	Posttest(mathematics) = .527 + (1.087) Pretest math + (-1.1.06) TCS + E	.984	.968	$.421_{1,35}$	.521	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 1B
There is a positive relationship between regular education elementary students' Mathematics achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

Specific Research Hypothesis 1C. Specific Research Hypothesis 1C predicted that there is a positive relationship between regular education elementary students' Language achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was found not to be significant. The F Change score equaled .024 with df_1 equal to 1 and df_2 equal to 35. This produced a p equal to .879 with an R square change (R^2_{Change}) equal to .000 (see Table 6).

Table 6

Specific Research Hypothesis 1C

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(language) = -.913 + (1.085) Pretest language + E	.980	.960			
Full	Posttest(language)= -.793 + (1.085) Pretest language + (-.328) TCS + E	.980	.960	$.024_{1-35}$	.879	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 1C. There is a positive relationship between regular education elementary students' Language achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

Specific Research Hypothesis 1D. Specific Research Hypothesis 1D predicted that there is a positive relationship between regular education elementary students' Social Studies achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was found not to be significant. The F Change score equaled .033 with df_1 equal to 1 and df_2 equal to 28. This produced a p equal to .857 with an R square change (R^2_{Change}) equal to .000 (see Table 7).

Table 7

Specific Research Hypothesis 1D

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(social studies) = -8.807 + (1.118) Pretest social studies + E	.973	.946			
Full	Posttest(social studies)= -8.749 + (1.119) Pretest social studies + (-.419) TCS + E	.973	.946	$.033_{1,28}$	.857	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 1D. There is a positive relationship between regular education elementary students' Social Studies achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

Specific Research Hypothesis 1E. . Specific Research Hypothesis 1E predicted that there is a positive relationship between regular education elementary students' Science achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences. This hypothesis was found not to be significant. The relationship tested was found to be in the non-predicted direction. The F Change score equaled .137 with df_1 equal to 1 and df_2 equal to 28. This produced a p equal to .714 with an R square change (R^2_{Change}) equal to .001 (see Table 8).

Table 8

Specific Research Hypothesis 1E

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(science) = -4.199 + (1.082) Pretest science + E	.978	.956			
Full	Posttest(science) = -4.368 + (1.081) Pretest science + (.857) TCS + E	.978	.957	$.137_{1,28}$	.714	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 1E. There is a positive relationship between regular education elementary students' Science achievement scores on the Iowa Tests of Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

General Research Hypothesis 2 (GH2). General Research Hypothesis 2 predicted that classroom teacher (demographics) accounts for a positive relationship in predicting student achievement, when controlling for pretest differences and type of school setting (PDS & TCS). This hypothesis was found not to be significant. The TCS scored higher, but is unclear if years of experience or education are responsible for higher TCS scores. The F Change score equaled .395 with df_1 equal to 3 and df_2 equal to 33. This produced a p equal to .757 with an R square change (R^2_{Change}) equal to .001 (see Table 9).

Table 9

General Research Hypothesis 2

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(composite) = 3.545 + (1.056) Pretest composite + (-.241) TCS + E	.989	.977			
Full	Posttest(composite) = 3.335 + (1.052) Pretest composite + (.199) TCS + (7.570E-02) Years experience + (-1.135) Masters + E	.989	.978	$.395_{3,33}$	.757	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
General Research Hypothesis 2. Classroom teacher (demographics) accounts for a positive relationship in predicting student achievement, when controlling for pretest differences and type of school setting (PDS & TCS).

Specific Research Hypothesis 2A. Specific Research Hypothesis 2A predicted that the years of experience of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills, when controlling for pretest differences and type of school setting (PDS & TCS). This hypothesis was found not to be significant. The F Change score equaled .649 with df_1 equal to 1 and df_2 equal to 34. This produced a p equal to .426 with an R square change (R^2_{Change}) equal to .000 (see Table 10).

Table 10

Specific Research Hypothesis 2A

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(composite) = 3.617 + (1.056) Pretest composite + (-.241) TCS + E	.989	.977			
Full	Posttest(composite) = 2.147 + (1.056) Pretest composite + (.221) TCS + (6.767E-02) Years experience + E	.989	.977	$.649_{1,34}$	.426	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 2A. The years of experience of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills, when controlling for pretest differences and type of school setting (PDS & TCS).

Specific Research Hypothesis 2B. Specific Research Hypothesis 2B predicted that the highest level of educational degree earned of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills, when controlling for pretest differences and type of school setting (PDS & TCS). This hypothesis was found not to be significant. The F Change score equaled .376 with df_1 equal to 1 and df_2 equal to 34. This produced a p equal to .544 with an R square change (R^2_{Change}) equal to .000 (see Table 11).

Table 11

Specific Research Hypothesis 2B

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	Posttest(composite) = 3.617 + (1.056) Pretest composite + (-.241) TCS + E	.989	.977			
Full	Posttest(composite) = 4.761 + (1.053) Pretest composite + (-.305) TCS + (-.953) Masters + E	.989	.977	$.376_{1,34}$	.544	No

Note. Alpha is .05; TCS coded 1; PDS coded 0
Specific Research Hypothesis 2B. The highest level of educational degree earned of the classroom teacher accounts for a positive relationship in predicting student achievement on the Iowa Test of Basic Skills, when controlling for pretest differences and type of school setting (PDS & TCS).

General Research Hypothesis 3 (GH3). General Research Hypothesis 3 predicted that there is a positive relationship in school attendance for students attending classrooms that are part of the professional development school program as compared to the traditional classroom setting. This hypothesis was found not to be significant. The F Change score equaled 1.828 with df_1 equal to 1 and df_2 equal to 36. This produced a p equal to .185 with an R square change (R^2_{Change}) equal to .048 (see Table 12).

Table 12

General Research Hypothesis 3

	Model	R	R^2	FChange $_{df1,df2}$	p	Signif.
Restricted	Attendance = 165.545 + E	.000	.000			
Full	Attendance = 182.750 + (-17.205) PDS + E	.220	.048	$1.828_{1,36}$	.185	No

Note. Alpha is <.05; PDS coded 1; TCS coded 0; negative score means less days absent
General Research Hypothesis 3. There is a positive relationship in school attendance for students attending classrooms that are part of the professional development school program as compared to the traditional classroom setting.

General Research Hypothesis 4 (GH4). General Research Hypothesis 4 predicted that the professional development school program, accounts for a positive relationship in predicting elementary school teachers' perceptions of school climate as measured by the NASSP School Climate Survey. This hypothesis was significant. In GH4, School Climate was an aggregate of the NASSP Survey subscales (teacher-student relationships; security and maintenance, student academic orientation; student behavioral values, student-peer relationships; and instructional management). The F Change score equaled 27.173 with df_1 equal to 1 and df_2 equal to 35. This produced a p equal to .000 with an R square change (R^2_{Change}) equal to .211 (see Table 13).

Table 13

General Research Hypothesis 4

	Model	R	R^2	F Change $_{df1,df2}$	p	Signif.
Restricted	School Climate = 17.111 + (.889) Pretest school climate + E	.719	.517			
Full	School Climate = 35.385 + (.809) Pretest school climate + (-15.501) TCS + E	.853	.728	$27.173_{1,35}$	.000	Yes

Note. Alpha is <.05; TCS coded 1; PDS coded 0

General Research Hypothesis 4. The professional development school program, accounts for a positive relationship in predicting elementary school teachers' perceptions of school climate as measured by the NASSP School Climate Survey.

Teacher Candidate Reflective Journals

The researcher directed each of 10 PDS teacher candidates to examine their reflective journals from three distinct occasions: following the Field Experience Placement, at the conclusion of the First Student Teaching Placement, and just prior to the final day of the Second Student Teaching Placement (see Table 14). PDS teacher candidates were instructed to identify keywords and phrases repeatedly found within the comments and notations contained in their reflective journals. These findings were to be supported by the use of quotations from their reflective journals.

As themes were identified and submitted by individual PDS teacher candidates, the researcher compiled a master list for each of the three designated submission periods. Themes emerged from the collected data that lent themselves to interpretation, the purpose of this study. Those themes included in this study appeared in a minimum

Table 14

Frequency of Common Themes in Teacher Candidate Journals That Supports Movement from Novice to Professional

	Field Experience	1st Student Teaching	2nd Student Teaching
Construct			
Classroom Management	10	9	
Planning	10	8	5
Effectiveness of Instruction		6	8
Assessment			9
Methodology			9

Note. Construct must appear in a minimum of 5 of the journals in order to be reported as a common theme. These are reflective of concepts of The Concerns-Based Adoption Model measuring professional development.

of five teacher candidate journals during the placement being reported. The researcher conducted a reliability check using three reflective journals in his possession. The researcher determined that the submissions provided by teacher candidates from these journals did correspond with his identification of keywords.

Field Experience Placement

Field experience, as defined by the participating university, is a time period of 18 school days when teacher candidates are present in the elementary classroom setting to observe, assist, and teach. At the conclusion of this field placement, teacher candidates were instructed to examine the reflective journals each kept during the field placement. Candidates were instructed to identify key themes and words they wrote in their journals that reflect their focus during this placement.

Themes that emerged arose from the reflections in the Field Experience Placement were the teacher candidates' constructs of classroom management techniques and planning. Each of the teacher candidates noted the concepts of classroom management and planning in their reflective journals.

This teacher candidate's comment reflects the view that many expressed:

> Mrs. Smith does such a wonderful job of keeping 21 first-graders "in-line". I wondered at that point in time how I was going to be able to do the same thing when I taught a number of lessons in that classroom. This teacher candidate also wrote, 'As with most pre-service teachers, classroom management is one of the overriding concerns. As with most things in life it is something you get better at with experience.' In my journal, I wrote down a number of strategies that are used by the teachers that I am observing. On one day I wrote "Mrs. Smith does a wonderful job of keeping the children on-task and she doesn't let any misbehavior slide. She nips everything in the bud."

After reviewing her journal another PDS teacher candidate reported the following:

> Student's behavior and my behavioral management system are included in every reflection at this point. My current classroom setting is one built upon respect and positive reinforcement. In her journal she wrote, "Respect is the key element in any classroom, once that is established, the overall atmosphere of the room is welcoming and focused upon learning."

Additionally, PDS teacher candidates invariably reported concerns dealing with the planning process. One teacher candidate expressed his concern with the following words:

> Some consistent themes that I've noticed in my reflections would be trying to increase student achievement/behavior through structured planning. I found out after my first observation that I wasn't preparing as well as I thought I was. I had a tough time at first with my Co-op falling ill for two weeks. My substitute teacher was out of her certification area so this forced me to implement my own behavior management system and become more of a teacher faster.

Summing up the focal points of classroom management techniques and planning are the thoughts of another teacher candidate,

> My planning is much more intense, and also I'm not afraid to ask for help anymore. That alone has brought a huge burden from my shoulders. I also found through reading my journals that my awareness of classroom management has jumped 10 times, which is a real good thing.

First Student Teaching Placement

Key themes and words identified during the first 8-week student teaching placement in teacher candidate reflective journals focused on classroom management, planning, and effectiveness of instruction. All participating teacher candidates reported a minimum two of the three aforementioned constructs as being prevalent in their reflective journals following this placement with three PDS teacher candidates including all three in their submissions.

The following are representative samples of student thoughts and journal entries for the first 8-week student teaching placement:

> Many times I ask how is it possible to design a lesson so that all students are sufficiently challenged. In one of my first journals I commented, 'It's extremely difficult to organize a lesson that meets the needs of every child. There are just such a wide variety of ability levels in the classroom.

> With more planning and changing things up a little more, I think if I improved on these items, it would make me a better teacher. When I taught a lesson about water erosion I wrote, "I wish I did this experiment last night." With proper planning, I believe the experiment would have been more successful in showing erosion and keeping the students attention. "They were more interested in touching the sand.

> From looking at my reflections I've noticed that things get easier, as far as organization, as time progresses. I still have to spend time getting materials organized, but I can write my lesson plans with ease by knowing my classroom well. I know what the student's strengths and needs are, which makes it an easier process than just writing a general lesson plan."

> This lesson was very hard to carryout. It seemed that the information I was trying to teach the students was much too complicated for them. I tried to give the students an everyday example of this type of word problem but they did not understand what I was looking for. When guiding the students through these problems they again were not grasping the concept of what was being asked. I know that if I would teach this lesson again that I would have to approach it differently but I'm not sure just how to do that.

Second Student Teaching Placement

Following the second 8-week student teaching placement, PDS teacher candidates' reflective journals described their thoughts on the following constructs: planning, effectiveness of instruction, assessment of student learning, and instructional methodologies. Seven of the ten PDS teacher candidates' comments listed three of these constructs (effectiveness of instruction, assessment of student learning, and instructional methodologies) as common themes for their second placement.

> After looking at my journal I realized that I really try to take the Constructivist approach to teaching. I assess my student's needs and really try to get my students a hands-on activity for each lesson. I really try to always have the students busy with either an activity or at least copying a transparency and having them fill it in with me. From my Co-op falling ill I had to look to other colleagues for support in reflections and lessons. I also went to other student teachers for advice on my behavioral management system. This really helped me out a great deal. Through this experience I've learned that I need to seek help, and be as flexible as possible.

Others wrote that: "I have learned that I am really starting to grow as a teacher. I am very conscious of what I am trying to teach and how my methodology does or does not work to get the information across."

> I feel that looking back at my journal has helped me see what my teaching style is like. I don't think that I always realize how I chose to go about my lessons, but there seems to be a pattern looking back. I am also beginning to see where my students are struggling and where they are excelling and who is in each of these groups. Also, as I write more and more lessons the format is becoming engrained in my head which helps me to really plan out

> what I want to do when I am teaching and it helps me to remember what I want to say instead of always referring to my lessons.
>
> As time progresses the team teaching model that Mr. Jones and I are integrating into the classroom is working really well. The students are receiving the content and information more effectively; therefore, learning is taking place. Creative activities are an excellent approach to enhance learning, and for keeping students engaged with the material being administered. I am looking forward to using this team teaching model in my future classroom, whenever possible.
>
> I have learned that I assess students in a variety of ways, and then look at the data and determine their level of understanding. If students are lacking in a certain area, I will redevelop my instructional techniques to meet the needs of the students. I always evaluate my teaching techniques, to see if I could have taught the content differently, or used better resources.
>
> My reflection journal also provided evidence of how I utilized a variety of assessment techniques to evaluate the performance of my students. These techniques range from hands-on activities to whole group educational games. A variety of assessment techniques are vital to ensure proper measurement of student's ability.

Summary

Chapter IV began with a brief discussion of the correlation matrix, followed by descriptive demographic statistics, ending with a review of the returned questionnaires. Analyzed were 38 returns from the PDS elementary public school setting. Next, a review of the statistical results as well as the findings in table form of the four general hypotheses and seven specific hypotheses was presented (see Tables 3-14 and Table 15). Multiple linear regression, the procedure for statistical analysis, was presented. An F test served at the determiner of significance or nonsignificance for each hypothesis. Finally, a review of common self-reported themes from teacher candidate reflective journals during each of their placements was presented.

Table 15

Summary of Hypotheses Testing

Hypothesis Number	R^2f	R^2r	R^2Change	df	Alpha	FChange	p	S/NS
GH1	.977	.977	.000	1/35	.05	.026	.873	NS
SH1A	.971	.971	.000	1/35	.05	.520	.476	NS
SH1B	.968	.967	.001	1/35	.05	.421	.521	NS
SH1C	.960	.960	.000	1/35	.05	.024	.879	NS
SH1D	.946	.946	.000	1/28	.05	.033	.857	NS
SH1E	.957	.956	.001	1/28	.05	.137	.714	NS
GH2	.978	.977	.001	1/33	.05	.395	.757	NS
SH2A	.977	.977	.000	1/34	.05	.649	.426	NS
SH2B	.977	.977	.000	1/34	.05	.376	.544	NS
GH3	.048		.048	1/36	.05	1.828	.185	NS
GH4	.728	.517	.211	1/35	.05	27.173	.000	S

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary of the Study

This dissertation is a mixed methods study analyzing the effects of a professional development school setting on student achievement, teachers' perceptions of school climate, and teacher candidate reflective journal entries as indicators of their growth as a teaching professional. In addition, this investigation asked if there was a relationship between a professional development school setting and student achievement when examining specific subject areas tested, the amount of years teaching experience one possesses, the highest degree of education achieved by the teacher, the effect on student attendance, and teachers' perceptions of school climate during this longitudinal study. Research supports the idea that student achievement and satisfaction with work climate are positively linked to professional development school settings (Edwards, 1995a; 1995b; Huff, 1995; Krug, 1992; Lezotte, 1997; Schoenstein, 1995). The literature also contends that teacher candidate reflective journal entries are expressions of philosophical attitudes (Telese, 1996) toward their profession that demonstrate an understanding the influence of environment on learning (Fountain, 1997). Runyan, Parks, and Sagehorn (2000) found that the PDS teacher candidates were more aware of their need to develop skills necessary for sound teaching practices.

Therefore, the professional development school setting has the potential to positively impact the academic achievement of students, teachers' perceptions of school climate, and the philosophical attitudes and skills of teacher candidates. The importance of these factors in the educational setting was best expressed by Linda Darling-Hammond when stating that the single most important determinant of success for a student is the knowledge and skills of that child's teacher (Goldberg, 2001).

This study sought to attain a multi-dimensional view of a professional development school site in order to determine the benefits for students, classroom teachers, and teacher candidates. While most studies pertaining to professional development schools analyze one aspect of the PDS, this study looked at the program more holistically.

This study investigated the effect of a Professional Development School classroom setting on the achievement of regular education elementary students as compared to the achievement of regular education elementary students in a traditional classroom setting. This study also examined the effect of the professional development school setting being utilized on the teachers' perceptions of school climate using the National Association of Secondary School Principals (NASSP) School Climate Survey. Reflective journals of teacher candidates within this setting were examined to gain an understanding of the effect of the PDS setting on teacher candidates' perceptions of their planning, instructional methodologies, effectiveness of instruction, assessment of students' learning, and classroom management techniques as they develop as teaching professionals.

The professional development school partnership in this study was chosen because of its availability as the school in which the researcher was asked to develop a professional development school site. Elementary regular education classroom teachers voluntarily completed a survey pertaining to their years of teaching experience, highest educational degree held, and identifying themselves as either a PDS teacher or not during the years being examined. Thirty-eight surveys were distributed. All surveys were returned. Twenty-two of the participating teachers served as PDS teachers, while 16 taught in traditional classroom settings. Similarly, all teachers completed the NASSP School Climate Survey Instrument. Twenty-two teacher candidates participated in the program during the years being examined. The researcher was able to obtain self analyses of reflective journals from 10 of the teacher candidates. Additionally, the researcher was able to conduct a reliability check using three of the reflective journals from the teacher candidates.

The research design used in this study was mixed methods. It was chosen to examine the overall effectiveness of the professional development school program in a particular site. This design was selected to comprehensively analyze the effects of the PDS classroom on student achievement, to gauge the relationship of PDS to school climate, and to identify themes in teacher candidate reflections relating to The Concerns-Based Adoption Model measuring professional development. This examination of reflective journals was completed to gain an understanding of the effect of the PDS setting on teacher candidates' constructs of planning, instructional methodologies, effectiveness of instruction, assessment of students' learning, and classroom management techniques as they developed as teaching professionals.

An ex post facto design was utilized because of the researcher's inability to manipulate the independent variables. The research design having been ex post facto does not control the independent variable and therefore causation cannot be inferred (Newman & Newman, 1994). Newman and Newman continued by stating that from an ex post facto design relationships among variables may be demonstrated. Regardless of the inability to determine causation from utilizing an ex post facto approach, the ability to determine if relationships can exist among variables can be very useful to researchers when one is trying to build a systematic argument that is data based.

This study used correlational, descriptive, and inferential statistics as well as qualitative data in the form of reflective journals. Responses to the teacher survey were assembled in the SPSS software program. Multiple linear regression was used to analyze the data for the four general hypotheses and seven specific hypotheses. Regression models were written to reflect each of the hypotheses.

Restricted and full models were then tested to determine if the hypothesis would be supported. In order to determine statistical significance, an F test was used to measure the proposed relationships presented in each hypothesis. An alpha level of .05 was set for each test.

Conclusions

This section is divided so that the first statements will be related to the general hypotheses, followed by specific research hypotheses and concluded with a general discussion of the specific research hypotheses.

Conclusions relating to General Research Hypotheses 1 through 4 and their specific hypotheses follow. It was found that this professional development school setting did not account for a significant amount of positive variance when predicting academic gains (see Appendix D), the effect of teachers' years of experiences or highest degree held, and changes in student school attendance.

When the results of the NASSP School Climate Survey were complete (using subscales: teacher-student relationships; security and maintenance, student academic orientation; student behavioral values, student-peer relationships; and instructional management) it was interesting to note that only General Hypothesis 4, the professional development school program, accounts for a significant positive relationship in predicting elementary school teachers' perceptions of school climate as measured by the NASSP School Climate Survey.

The results of this investigation are consistent with the review of literature for General Hypothesis 4 which suggests that the manner in which professional development school programs provide continued professional development affects almost everything in the school environment for those teachers participating in the program (Bullough, Kauchak, Crow, Hobbs, & Stokes, 1997; Campbell, Strawderman, & Reavis,1996; Edwards, 1995a, 1995b; Huff, 1995; Petrosko & Munoz 2002; Schoenstein, 1995; Shroyer, Wright, & Ramey-Gassert, 1996).

This being noted, the following discussion of all General Hypotheses and Specific Hypotheses seems relevant.

General Hypothesis 1. There is a positive relationship between regular education elementary students' Composite achievement scores on the Iowa Tests of

Basic Skills in a professional development school setting and the scores of students in a traditional classroom setting, when controlling for pretest differences.

For the purposes of this discussion, the General Hypothesis 1 and Specific Hypotheses 1A through 1E were combined to examine the relationship of student achievement determined by the Iowa Tests of Basic Skills and participation in a PDS classroom setting. To summarize General Hypothesis 1, which studied the relationship between elementary students' composite scores on the Iowa Tests of Basic Skills and the placement in a professional development school setting, it was determined to be a nonsignificant relationship ($p = .873$). Additionally, Specific Hypotheses 1A through 1E were also found to be nonsignificant relationships with the following p values: Specific Hypothesis 1A Reading achievement and PDS ($p = .476$); Specific Hypothesis 1B Mathematics achievement and PDS ($p = .521$); Specific Hypothesis 1C Language and PDS ($p = .879$); Specific Hypothesis 1D Social Studies and PDS ($p = .857$); and Specific Hypothesis 1E Science and PDS ($p = .714$).

The fact that no significance was found in these hypotheses indicates that students in this professional development school setting did not score significantly better in the district's testing of student achievement. This is inconsistent with the literature reported in Chapter II of this study (Castle & Rockwood, 2002; Gill & Hove, 2000; Teitel, 1996). When speculating on why the data concerning student achievement was contrary to much of the literature, one must consider the findings of Pine (2003), who also reported longitudinal data from a single professional development school. In Pine's report of a Michigan-based elementary PDS, there was an initial dip in a negative direction of test scores. Later scores did increase as

instructional practices were slowly changed. It is very possible that this will be the case for the PDS in this study. Pine's findings indicate that further study may be necessary to determine the long-term impact on student achievement.

General Hypothesis 2. The classroom teacher (demographics) accounts for a positive relationship in predicting student achievement, when controlling for pretest differences and type of school setting (PDS & TCS).

For the purposes of this discussion, General Hypothesis 2 and Specific Hypotheses 2A and 2B were combined to examine the relationship between classroom teacher (demographics) and student achievement when controlling for pretest differences and type of school (PDS & TCS). To summarize, General Hypothesis 2 examined the positive effect of PDS in relationship to teachers' years of experience and teachers' highest degree level. This relationship was found to be nonsignificant ($p = .757$).

Specific Hypothesis 2A investigated the positive relationship between years of teaching experience and the academic performance of PDS students. While Specific Hypothesis 2B sought to determine if a positive relationship exists between teacher's highest degree and the academic performance of PDS students. Both of these specific hypothesis were found to be nonsignificant (SH 2A, $p = .426$; SH 2B, $p = .544$).

The fact that none of these were found to be significant indicates that for these students the teachers' demographics did not significantly impact their learning.

General Hypothesis 3. There is a positive relationship in school attendance for students attending classrooms that are part of the professional development school program as compared to the traditional classroom setting.

General Hypothesis 3 examined the positive effect of a professional development school setting on the attendance of students. This was found to be a nonsignificant relationship ($p = .185$). Frey (2002) in a partnership between a middle school and San Diego State University demonstrated how the framework of the NCATE PDS Standards affected the engaging experiences students were exposed to in this study. While these types of engaging experiences were found to be a welcome change of routine by students, there were positive gains, they did not result in significant changes of attendance patterns.

General Hypothesis 4. The professional development school program, accounts for a positive relationship in predicting elementary school teachers' perceptions of school climate as measured by the NASSP School Climate Survey.

General Hypothesis 4 examined the positive effect of a professional development school setting on the elementary school teachers' perceptions of their work environment (security and maintenance, instructional management, student academic orientation, and student behavioral values) and the relationships between students and teachers, students and their peers. This hypothesis was found to be significant ($p = .000$).

The literature abounds with references to the importance of teacher buy-in as an initial step to a change process. Darling-Hammond, Cobb, and Bullmaster (1995) stated that as teachers become mentors and teacher educators, as they assume greater responsibility for the collective profession, they also become more comfortable with the notion that seeking and leading collective improvements in practice are aspects of a professional role, thus affecting a change in their perception of the school

environment. Additionally, the effect of PDS on educational practices was the focus of Bullough et al. (1997), Campbell et al. (1996) and Shroyer et al. (1996). These studies detailed the changes in the teaching practice (increased hands-on inquiry approaches, attitudes toward science instruction, and sense of efficacy in teaching science), self-reflection, and empowerment. Fountain, Drummond, and Senerfitt (2000) asked classroom teachers to "name and describe one to three ways [the PDS] has influenced your classroom practice" (p. 8). Among the themes identified were collegiality, reflectivity, decision-making, ongoing inquiry, and commitment to teaching. Each of these themes can directly be linked to several of the subscales of the NASSP School Climate Survey.

Positive school climate has been found to be a vital component of effective schools, validating earlier research findings (Lezotte, 1997). Petrosko and Munoz (2002) found that changes in teacher beliefs, perceptions of school climate and observable behaviors were attributable to the PDS environment. Apparently, teachers' perceptions of school climate have been the first to be altered by the professional development school setting.

An examination of self-submissions of ten PDS teacher candidate reflective journals indicated that they are developing closely along the levels of concern described in) that teachers' experience as they adopt a new practice (awareness, informational, personal, management, consequence, collaboration, and refocusing). With each of the three submissions (see Table 14) teacher candidates progressed from the earliest stages of the Concerns-Based Adoption Model (awareness, informational,

personal, and management) toward the more sophisticated levels of the model (consequence, collaboration, and refocusing).

During the Field Experience placement, teacher candidates focused their writing on the themes of classroom management and planning. These constructs are closely related to the levels of awareness (little concern or involvement), informational (general interest and desiring to know more), personal (questioning how they ramifications may be affected), and management (focusing on information and resources).

In the First Student Teaching Placement, teacher candidates submitted the themes of classroom management, planning, and effectiveness of instruction as reoccurring constructs in their journals. The addition of effectiveness of instruction matches Loucks and Hall's (1979) Concerns-Based Adoption Model level of consequence where the teacher candidate focuses on the impact of instruction on students.

During the Second Student Teaching Placement, the constructs identified by teacher candidates included the following: planning, effectiveness of instruction, assessment, and methodology. These submissions to the researcher indicated to the researcher that the teacher candidates have moved further along in their professional development based upon The Concerns-Based Adoption Model (Loucks & Hall, 1979) by addressing the areas of collaboration and refocusing. Within the level of collaboration, teachers describe occasions when they cooperate with other teachers in implementing their plans. Refocusing is the final level of this model and is achieved

when teacher candidates consider the benefits of the instruction and additional alternatives that might work even better for their students.

This study examined the program from a multi-dimensional view, leading the researcher to the following conclusions. In that 5 of the 6 hypotheses were in the predicted direction, the quantitative data is supportive of a trend (89% confident) that a positive relationship exists between this PDS setting and academic gain ($p = .11$). This seems to be a positive trend leading the researcher to believe that if a larger N size had been available, statistical significance would likely been achieved. The quantitative data also has determined statistical significance in the relationships between this PDS setting and teachers' perceptions of school climate. Of the six subscales of the NASSP School Climate Survey, four were found to be significant positive in a predicted direction. When considering all 10 subscales of the NASSP School Climate Survey, 6 were found to be significant positive relationships. Qualitative data was also collected from teacher candidates' reflective journals which was supportive of positive school climate. The author also had a sample of reflective journals and confirmed the reliability of submitted constructs which indicates a positive movement in professional development of teacher candidates.

Implications

The focus of this research was to attain a multi-dimensional view of a professional development school site in order to determine the benefits for students, classroom teachers, and teacher candidates. In this study, multiple linear regression analysis results implied that student achievement in this professional development setting was not significantly different however, there was a trend moving in a positive

direction. This research did determine that PDS teachers' perceptions of school climate as measured by the NASSP School Climate Survey were significantly different from those of their colleagues within this same school setting. Teacher candidate submissions of reflective journaling also indicated that this PDS setting did facilitate their positive growth from novice to professional along the Stages of Concern-Based Adoption Model described by Hall and Loucks (1979).

The review of literature supports the hypothesis that a professional development school setting serves as a catalyst for improving student achievement (Castle & Rockwood, 2002; Gill & Hove, 2000; Pine, 2003; Teitel, 1996). However, as stated by Ross, Brownell, Sindelar, and Vandiver (2000), an achievement test may not be the best instrument to measure the outcomes of a PDS. In their findings, rubrics, rather than achievement tests, may be the measurement instruments that best indicate the effect of changes in instructional practices on student achievement.

Student achievement scores indicate a positive trend in gain scores in Iowa Tests of Basic Skills in that, while not found to be significant at a 95% confidence level, those students engaged in PDS classroom settings did score in the predicted direction on five of the six hypotheses. Science was the only area tested that demonstrated a negative relationship between PDS and achievement. This result could be related to the amount of classroom instructional time devoted to Science which was typically less than other content areas that were examined.

The literature specifically stated that teachers' perceptions of their workplace and the value of continuing professional development are affected by PDS in-service opportunities (Sandholtz, 2001). The research of Bullough et al. (1997), Campbell et

al. (1996), and Shroyer et al. (1996) all support the value of expertise provided by school/university collaboratives and partnerships. Included in these studies are positive findings concerning teachers' attitudes toward instruction, sense of efficacy in teaching, self-reflection, and an increased sense of empowerment. Therefore, in order for teachers to feel efficacious, they need to be involved in continual professional development. A school district considering forming a collaborative PDS program with a college/university must prepare to restructure the traditional top down thinking of on-going professional development.

Those teachers not included in the PDS at this time have not received the release time with the accompanying professional development opportunities that their PDS counterparts have. This may have been a factor in school climate perceptions being statistically significant between the two groups.

The greatest challenge in the preparation of teacher candidates is to motivate teacher candidates to think as teachers and not as students. This professional development school setting effectively transitioned the teacher candidates along The Concerns-Based Adoption Model (Loucks & Hall, 1979) as demonstrated by the teacher candidates' self-analysis submissions. This progression of levels by the teacher candidates demonstrated the beginning of the transitional process from novice to professional.

The PDS in this study provided teacher candidates one setting for all three preparatory experiences. They became acclimated to this setting. According to Darling-Hammond (1994), this immersion is a vital difference from traditional teacher preparation and an important part of the professionalization of teaching. Teacher

candidates are then better able to work collaboratively with cooperating teachers and with other teacher candidates to provide students with deeper and richer educational activities (Berg, Grisham, Jacobs, & Mathison, 2000).

Pine, Maloy, Seidman, and Ludlow (2003) evaluated types of teacher preparation. In their report, they described characteristics of various preparatory programs, methods of recruitment for each program, and details on specific program features that are unique from the others in the study. The data gathered in this study indicated that there were clear connections between PDS and teacher candidates holding increased perceptions about their preparation and effectiveness in the classroom. Therefore, teacher candidates had an increased sense of professional efficacy.

Recommendations and Suggested Further Research

This research focuses on the efficacy of using a professional development school model as a means of providing an enriched student teaching experience to increase student learning outcomes, examine changes in teachers' attitudes and teacher candidate development as measured by self-reported reflective journal entries. Given the current trend by state department of education officials to mandate professional development school experiences for teacher candidates and the growing number of teacher preparatory institutions and public school settings voluntarily forming PDS partnerships and collaboratives, the study was important and timely. Based on this study, it is recommended that school districts considering the implementation of a PDS collaborative investigate other PDSs to determine the PDS model they find most congruent with their goals and objectives. Additionally, they should examine the

instrument used to evaluate student achievement. It is also recommended that this PDS collaborative continue to examine student achievement in this setting with the same instrument to provide continuity for this longitudinal study. This will add to the N size, which will increase the power of the study, and either support or reject the trend toward positive statistical significance in terms of student gains.

The role of administrators within the PDS process should be the subject of further examination. Much of the literature speaks to the importance of the principal in any successful change process. Without a strong instructional leader, professional development school implementation is more difficult. This leader must be willing to collaborate with university personnel, teacher candidates, and faculty to determine the most effective method to affect instructional practices. During this study, the building administrator did not attend any planning sessions of the site steering committee nor was there participation in any of the professional development of the faculty and teacher candidates. This administrator has since been reassigned to another site with other duties. A new administrator has been assigned to the site of this study.

As teachers' perceptions of school climate improve, so should student achievement. Studies are needed to continue to examine the long-term effects of the current PDS structure. Studies also need to be conducted to examine student and parental perceptions of a PDS's effect on school climate. This data could be correlated to the data obtained from teachers. When students and parents feel that teachers are concerned with their learning process, when instruction is more engaging, when teacher/student/peer/parent relationships improve, students may demonstrate more clearly the achievement they have acquired.

Summary

The culture of teaching continues to evolve with changing times and expectations. However, the need for high-quality educators remains constant. One of the greatest challenges facing education today is the training of teacher candidates in supportive and facilitative environments.

This study investigated one professional development school site and the effect of the current program on student achievement, teachers' perceptions of school climate, and reflective journals of teacher candidates. In all areas measured by the Iowa Tests of Basic Skills, the student achievement in the PDS setting was not found to be significantly different from the traditional classroom setting; however, five of the six areas demonstrated a positive trend. PDS teachers' years of experience in teaching and their highest level of degree earned were not significant factors in student achievement even though they possessed a much greater number of years experience in teaching with a greater percentage of graduate degrees. PDS students' attendance was also not significantly different from that of other students in traditional classroom settings. However, teachers' perceptions of school climate were scored higher by those engaged in the PDS program.

Teacher candidate self-reported reflective journal themes were consistent with The Concerns-Based Adoption Model (Loucks & Hall, 1979) in describing the levels of concerns teachers experience as they adopt new practices.

This study offers schools and universities a model for evaluating the effectiveness of a professional development school partnership. As this study sought to evaluate one PDS in terms of improved student learning, an enhanced school

climate, and more effective teacher candidate experiences, a multi-dimensional view of each PDS model design must be considered by those interested in instituting and evaluating any PDS program.

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APPENDICES

APPENDIX A

PROFESSIONAL DEVELOPMENT SCHOOL

APPLICATION FOR PLACEMENT

Name _____

Local Address _____

_____

Home Address _____

_____

Local Telephone _____ Home Telephone _____

Email Address _____

To apply for the XXXXX Professional Development School Program for your field and student teaching placements, please respond to this application. Please return this application to Mr. Kim Creasy, 113B, McKay Education Building.

1. List and describe any experiences you have had with children and youth and how these experiences have contributed to your desire to be a teacher.

2. List and describe your work experiences that included high involvement with other people and explain how they contributed to your overall development and your development as a teacher candidate.

3. List areas of personal interests and activities in which you have engaged that could help you enrich children's learning.

4. Briefly describe an event, experience, activity, or reading that has shaped your idea of what a teacher's role should be in a classroom.

5. Write a statement telling why you wish to complete the field and student teaching placements in the XXXX Elementary.

6. Please provide any additional information that you believe is relevant to your application for the XXXX Professional Development School Program.

Dear XXX Student:

You are being invited to apply for placement in the XXXX Elementary Professional Development School Program. If accepted, your field placement in the fall semester and student teaching in the spring semester will occur in the XXXX Elementary School.

I am sure you have many questions regarding professional development schools. An attempt to address commonly posed questions is on an accompanying paper. Also included is the application information necessary for consideration.

Below are comments made by PDS teacher candidates during the past school year. Please consider their experiences and comments in making your decision.

Sincerely,

Kim L. Creasy
XXX Instructor

"I have become comfortable with many teachers other than my co-op and have been able to take advantage of these relationships to further enhance my lessons and teaching ability." — Nina

"Through the PDS program, I felt that I was a part of something great. I had other student teachers to talk to and interact with. Also, the teachers in the school knew my first name." — Mindy

"XXX became a huge part of my life. My life actually revolved around teaching. I learned so much from the teachers I worked with, and I grew professionally and personally from my experiences with the children. XXX is the perfect place to teach." — Beth

"I think that the atmosphere that I taught in helped me grow more as a teacher. I was not afraid to be myself in front of my co-op or other staff members. The relaxed, friendly environment also helped my peers and me feel included and seen as equals." — Christine

What is a Professional Development School?

In an effort to create a new culture of professional learning with public schools that meet the unique needs of today's students, many educators have advocated the creation of Professional Development Schools (Darling-Hammond, 1994
Levine, 1997). Virtually every report and commission study on teacher education (Goodlad, 1990
Holmes Group, 1990
Levine, 1992) acknowledges the Professional Development School as a strong educational change.

Professional Development Schools support the learning of teacher candidates as they enter professional practice by matching them with expert practitioners concerned with their own continued professional growth.

What are the goals of our Professional Development School?

The goals of the XXXX PDS are:

1. to enhance the educational experiences of all children.
2. to insure high quality experiences for teacher candidates.
3. to engage in furthering our own professional growth as educators.

What are some of the unique experiences of this Professional Development School?

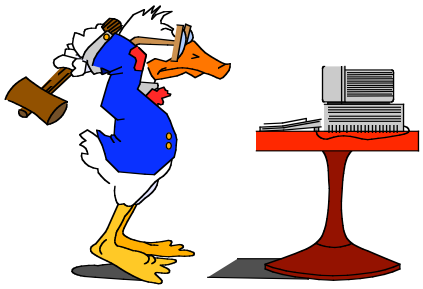
- Collaborative work in a school setting focused on best practices.
- Seminars developed by university and school-based teacher educators.
- Discussions that bring theory to practice and practice to theory.
- Professional development through in-service training.
- Opportunities for peer evaluation.
- Opportunities to observe across grade levels.
- Emphasis on developing an inquiry approach to teaching.

How are PDS teacher candidates selected?

Entrance into this placement is competitive. University and school district representatives will review applications. Consideration for this placement will include (but is not limited to) the following: the willingness to follow the school district's calendar, motivation, organizational skills, teaching, work habits, and ability to collaborate with other professionals.

APPENDIX B

CAMPUS DAY PROFESSIONAL DEVELOPMENT AGENDAS



Professional Development Day
January 14, 2003

Agenda

8:30-9:00	Juice and goodies
9:00-12:00	Meeting between co-ops and student teachers to review curriculum and materials
12:00-1:00	Lunch on your own
1:00-2:30	Computer Lab in IMC with Mrs. Tomeo (educational searches and resources)
2:30-3:30	Planning for next development day
	Wrap-up

Professional Development Day

March 31, 2003
Bailey Library

Agenda

8:30-9:00	*Juice and Danish*
9:00-10:00	*Planning*
10:00-12:00	*E-Portfolios with Chrissy Le*
12:00-1:00	*Lunch on your own*
1:00-3:00	*Planning*
3:00-3:30	*Wrap-up*

Professional Development School
Campus Day
January 11, 2004

Agenda

8:10-9:00 Continental Breakfast and Introductions at the ARC

9:00-11:30 Ropes Course – Team Building
Jen Chestnut

11:30-12:30 Lunch

12:30-1:00 Resources and Research
Melba Tomeo
IMC in Bailey Library

1:00-3:30 Getting the Big Picture
(planning session between cooperating teachers and teacher candidates)

3:30-3:40 Wrap-up, Feedback, and Thank You

PDS
Campus Day
March 15, 2004
Agenda

8:10 – 8:45	Rise and Shine Breakfast (coffee, juice, and pastries) Special Collections Room of Bailey Library
8:45 – 11:30	Planning with your Cooperating Teacher/Student Teacher Please discuss classroom management procedures, curriculum content and methodology of instruction, expectations, and dreams.
11:30 – 12:30	Lunch on your own.
12:30 – 1:45	Video and time to share
1:45 – 2:00	Break
2:00 – 3:40	Reflecting on Teaching Experiences and Instruction

Each classroom teacher should come prepared to discuss curriculum of the district for his or her grade level. Please bring needed materials (teacher's editions and curriculum plans). This will mean that it is necessary to provide copies of needed materials for your substitute for this day.

Student teachers should bring their reflective journals and be prepared to share some of their insights from field, your first placement at SRAE, and Duquesne.

APPENDIX C

CONSENT FORM AND SURVEY INSTRUMENT

Consent Form

You are invited to participate in a study being conducted by Kim Creasy, a doctoral candidate from the College of Education, Department of Curricular and Instructional Studies, University of Akron, Akron, OH.

The project focuses on student achievement. Specifically, the project will look at the gain scores of regular education elementary students on the Iowa Tests of Basic Skills. The researcher is particularly interested to discover gains of Professional Development School classrooms.

If you decide to participate, you will be asked to take part in a survey at a convenient time and place for you. The survey should take 30 minutes of your time.

Participation in the project is completely voluntary. If you agree to participate, you may refuse to answer any questions and may withdraw from the study at any time.

Your confidentiality will be protected throughout the study. Any data obtained from you through the survey will be kept confidential and will not be viewed by anyone but the researcher and his advisor. All identifying information will be retained in a locked storage area. The data will be kept for one year and will be destroyed upon completion of the project.

There are no anticipated benefits or risks to you as a participant, aside from helping us have a better understanding of the effect of a professional development school setting on student achievement.

If you have any questions about the research project, you can call me at 724-738-2285 or my advisor Dr. Carole Newman at 330-972-6465.

This research project has been reviewed and approved by The University of Akron Institutional Review Board for the Protection of Human Subjects. Questions about your rights as a research participant can be directed to Ms. Sharon McWhorter, Associate Director, Research Services, at 330-972-7666 or 1-888-232-8790.

Thank you for your participation!

I **consent** to participate in this project:

_____ _____

Name Date

Teacher Survey

INSTRUCTIONS: On this sheet please answer the following questions:

During the 2002-2003 school year:

1. During the school year noted above, did you serve as a cooperating teacher for the Slippery Rock University/Slippery Rock School District Professional Development School program?
   Please circle one: A = Yes B = No

2. Including this year, how many years of experience have you had in teaching?
   _____ years

3. Including this year, how many years of experience have you had in your current teaching assignment?
   _____ years

4. Please circle the highest degree you have earned:
   A = Bachelor's Degree B = Master's Degree

5. Please circle your gender:
   A = Male B = Female

During the 2003-2004 school year:

1. During the school year noted above, did you serve as a cooperating teacher for the Slippery Rock University/Slippery Rock School District Professional Development School program?
   Please circle one: A = Yes B = No

2. Including this year, how many years of experience have you had in teaching?
   _____ years

3. Including this year, how many years of experience have you had in your current teaching assignment?
   _____ years

4. Please circle the highest degree you have earned:
   A = Bachelor's Degree B = Master's Degree

5. Please circle your gender:
   A = Male B = Female

APPENDIX D

CORRELATION MATRIX

The correlation matrix for this study begins on page 121. The following abbreviations refer to the variables included in the matrix.

PDS = Professional Development School
PRECOMP = Pretest Composite Scores
POSTCOMP = Posttest Composite Scores
PRERDG = Pretest Reading
POSTRDG = Posttest Reading
PREMATH = Pretest Mathematics
POSTMATH = Posttest Mathematics
PRELANG = Pretest Language
POSTLANG = Posttest Language
PRESOC = Pretest Social Studies
POSTSOC = Posttest Social Studies
PRESCIE = Pretest Science
POSTSCIE = Posttest Science
COMPGAIN = Composite Gain Scores
RDGGAIN = Reading Gain Scores
MATHGAIN = Math Gain Scores
LANGGAIN = Language Gain Scores
SSGAIN = Social Studies Gain Scores
SCIGAIN = Science Gain Scores
PRECLIM = Pretest School Climate
POSTCLIM = Posttest School Climate
TCHSTR1 = Pretest Teacher-Student Relationships
SECUR1 = Pretest Security and Maintenance
ACADEM1 = Pretest Student Academic Orientation
BEHAV1 = Pretest Student Behavioral Values
STPEER1 = Pretest Student-Peer Relationships
MANAGE1 = Pretest Instructional Management
ADMSTR1 = Pretest Administration
GUID1 = Pretest Guidance
PARENCO1 = Pretest Parent and Community-School Relationships
STACT1 = Pretest Student Activities =
TCHSTR2 = Posttest Teacher-Student Relationships
SECUR2 = Posttest Security and Maintenance
ACADEM2 = Posttest Student Academic Orientation
BEHAV2 = Posttest Student Behavioral Values
STPEER2 = Posttest Student-Peer Relationships
MANAGE2 = Posttest Instructional Management
ADMSTR2 = Posttest Administration
GUID2 = = Posttest Guidance
PARENCO2 = Posttest Parent and Community-School Relationships
STACT2 = Posttest Student Activities =
TSTRGAIN = Teacher-Student Relationships Gain
SECGAIN = Security and Maintenance Gain
ACAGAIN = Student Academic Orientation Gain
BEHAGAIN = Student Behavioral Values Gain
STPEGAIN = Student-Peer Relationships Gain
MANAGAIN = Instructional Management = Gain
ADMGAIN = Administration Gain
GUIDGAIN = Guidance Gain
PARCGAIN = Parent and Community-School Relationships Gain
STACGAIN = Student Activities Gain
CLIGAIN = School Climate Gain;

		PDS	PRECOMP	POSTCOMP	PRERDG	POSTRDG	PREMATH
PDS	Pearson Correlation	1	-0.037	-0.032	-0.025	-0.004	-0.048
	Sig. (1-tailed)	.	0.414	0.424	0.441	0.491	0.387
	N	38	38	38	38	38	38
PRECOMP	Pearson Correlation	-0.037	1	0.989	0.986	0.978	0.996
	Sig. (1-tailed)	0.414	.	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
POSTCOMP	Pearson Correlation	-0.032	0.989	1	0.973	0.986	0.985
	Sig. (1-tailed)	0.424	0.000	.	0.000	0.000	0.000
	N	38	38	38	38	38	38
PRERDG	Pearson Correlation	-0.025	0.986	0.973	1	0.985	0.984
	Sig. (1-tailed)	0.441	0.000	0.000	.	0.000	0.000
	N	38	38	38	38	38	38
POSTRDG	Pearson Correlation	-0.004	0.978	0.986	0.985	1	0.977
	Sig. (1-tailed)	0.491	0.000	0.000	0.000	.	0.000
	N	38	38	38	38	38	38
PREMATH	Pearson Correlation	-0.048	0.996	0.985	0.984	0.977	1
	Sig. (1-tailed)	0.387	0.000	0.000	0.000	0.000	.
	N	38	38	38	38	38	38
POSTMATH	Pearson Correlation	-0.028	0.983	0.996	0.964	0.980	0.984
	Sig. (1-tailed)	0.434	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
PRELANG	Pearson Correlation	-0.017	0.989	0.969	0.966	0.953	0.983
	Sig. (1-tailed)	0.460	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
POSTLANG	Pearson Correlation	-0.011	0.989	0.991	0.968	0.974	0.984
	Sig. (1-tailed)	0.473	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
PRESOC	Pearson Correlation	-0.066	0.988	0.976	0.988	0.960	0.975
	Sig. (1-tailed)	0.363	0.000	0.000	0.000	0.000	0.000
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	-0.056	0.964	0.987	0.970	0.978	0.952
	Sig. (1-tailed)	0.383	0.000	0.000	0.000	0.000	0.000
	N	31	31	31	31	31	31

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
PDS	Pearson Correlation	-0.028	-0.017	-0.011	-0.066	-0.056	-0.060
	Sig. (1-tailed)	0.434	0.460	0.473	0.363	0.383	0.374
	N	38	38	38	31	31	31
PRECOMP	Pearson Correlation	0.983	0.989	0.989	0.988	0.964	0.989
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTCOMP	Pearson Correlation	0.996	0.969	0.991	0.976	0.987	0.983
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRERDG	Pearson Correlation	0.964	0.966	0.968	0.988	0.970	0.977
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTRDG	Pearson Correlation	0.980	0.953	0.974	0.960	0.978	0.966
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PREMATH	Pearson Correlation	0.984	0.983	0.984	0.975	0.952	0.976
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTMATH	Pearson Correlation	1	0.963	0.988	0.964	0.975	0.970
	Sig. (1-tailed)	.	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRELANG	Pearson Correlation	0.963	1	0.980	0.961	0.922	0.963
	Sig. (1-tailed)	0.000	.	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTLANG	Pearson Correlation	0.988	0.980	1	0.970	0.963	0.977
	Sig. (1-tailed)	0.000	0.000	.	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRESOC	Pearson Correlation	0.964	0.961	0.970	1	0.973	0.980
	Sig. (1-tailed)	0.000	0.000	0.000	.	0.000	0.000
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.975	0.922	0.963	0.973	1	0.969
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	.	0.000
	N	31	31	31	31	31	31

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
PDS	Pearson Correlation	-0.028	-0.017	-0.011	-0.066	-0.056	-0.060
	Sig. (1-tailed)	0.434	0.460	0.473	0.363	0.383	0.374
	N	38	38	38	31	31	31
PRECOMP	Pearson Correlation	0.983	0.989	0.989	0.988	0.964	0.989
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTCOMP	Pearson Correlation	0.996	0.969	0.991	0.976	0.987	0.983
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRERDG	Pearson Correlation	0.964	0.966	0.968	0.988	0.970	0.977
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTRDG	Pearson Correlation	0.980	0.953	0.974	0.960	0.978	0.966
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PREMATH	Pearson Correlation	0.984	0.983	0.984	0.975	0.952	0.976
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTMATH	Pearson Correlation	1	0.963	0.988	0.964	0.975	0.970
	Sig. (1-tailed)	.	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRELANG	Pearson Correlation	0.963	1	0.980	0.961	0.922	0.963
	Sig. (1-tailed)	0.000	.	0.000	0.000	0.000	0.000
	N	38	38	38	31	31	31
POSTLANG	Pearson Correlation	0.988	0.980	1	0.970	0.963	0.977
	Sig. (1-tailed)	0.000	0.000	.	0.000	0.000	0.000
	N	38	38	38	31	31	31
PRESOC	Pearson Correlation	0.964	0.961	0.970	1	0.973	0.980
	Sig. (1-tailed)	0.000	0.000	0.000	.	0.000	0.000
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.975	0.922	0.963	0.973	1	0.969
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	.	0.000
	N	31	31	31	31	31	31

		SCIGAIN	PRECLIM	POSTCLIM	TCHSTR1	SECUR1	ACADEM1
PDS	Pearson Correlation	-0.086	0.139	0.555	-0.009	0.423	0.181
	Sig. (1-tailed)	0.323	0.203	0.000	0.480	0.004	0.138
	N	31	38	38	38	38	38
PRECOMP	Pearson Correlation	0.351	-0.508	-0.287	-0.341	-0.314	-0.578
	Sig. (1-tailed)	0.026	0.001	0.040	0.018	0.028	0.000
	N	31	38	38	38	38	38
POSTCOMP	Pearson Correlation	0.464	-0.476	-0.271	-0.335	-0.296	-0.561
	Sig. (1-tailed)	0.004	0.001	0.050	0.020	0.036	0.000
	N	31	38	38	38	38	38
PRERDG	Pearson Correlation	0.365	-0.481	-0.258	-0.295	-0.312	-0.565
	Sig. (1-tailed)	0.022	0.001	0.059	0.036	0.028	0.000
	N	31	38	38	38	38	38
POSTRDG	Pearson Correlation	0.449	-0.446	-0.231	-0.305	-0.284	-0.528
	Sig. (1-tailed)	0.006	0.003	0.081	0.031	0.042	0.000
	N	31	38	38	38	38	38
PREMATH	Pearson Correlation	0.384	-0.487	-0.272	-0.327	-0.309	-0.579
	Sig. (1-tailed)	0.017	0.001	0.049	0.023	0.030	0.000
	N	31	38	38	38	38	38
POSTMATH	Pearson Correlation	0.466	-0.446	-0.241	-0.320	-0.273	-0.566
	Sig. (1-tailed)	0.004	0.003	0.073	0.025	0.049	0.000
	N	31	38	38	38	38	38
PRELANG	Pearson Correlation	0.298	-0.518	-0.286	-0.369	-0.305	-0.554
	Sig. (1-tailed)	0.052	0.000	0.041	0.011	0.031	0.000
	N	31	38	38	38	38	38
POSTLANG	Pearson Correlation	0.405	-0.455	-0.238	-0.332	-0.269	-0.523
	Sig. (1-tailed)	0.012	0.002	0.075	0.021	0.051	0.000
	N	31	38	38	38	38	38
PRESOC	Pearson Correlation	0.338	-0.502	-0.351	-0.474	-0.276	-0.479
	Sig. (1-tailed)	0.031	0.002	0.026	0.004	0.066	0.003
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.437	-0.457	-0.337	-0.432	-0.234	-0.431
	Sig. (1-tailed)	0.007	0.005	0.032	0.008	0.103	0.008
	N	31	31	31	31	31	31

		BEHAV1	STPEER1	MANAGE1	ADMSTR1	GUID1	PARENCO1
PDS	Pearson Correlation	-0.003	-0.377	0.049	-0.065	0.236	0.188
	Sig. (1-tailed)	0.493	0.010	0.385	0.349	0.077	0.130
	N	38	38	38	38	38	38
PRECOMP	Pearson Correlation	0.017	-0.053	-0.342	-0.312	-0.016	0.012
	Sig. (1-tailed)	0.461	0.376	0.018	0.028	0.462	0.473
	N	38	38	38	38	38	38
POSTCOMP	Pearson Correlation	0.069	-0.035	-0.325	-0.333	0.015	0.011
	Sig. (1-tailed)	0.340	0.417	0.023	0.021	0.464	0.473
	N	38	38	38	38	38	38
PRERDG	Pearson Correlation	-0.030	-0.120	-0.338	-0.328	0.040	0.058
	Sig. (1-tailed)	0.430	0.236	0.019	0.022	0.405	0.364
	N	38	38	38	38	38	38
POSTRDG	Pearson Correlation	0.035	-0.093	-0.306	-0.334	0.081	0.045
	Sig. (1-tailed)	0.416	0.290	0.031	0.020	0.314	0.393
	N	38	38	38	38	38	38
PREMATH	Pearson Correlation	0.033	-0.050	-0.329	-0.321	-0.035	0.003
	Sig. (1-tailed)	0.422	0.383	0.022	0.025	0.417	0.494
	N	38	38	38	38	38	38
POSTMATH	Pearson Correlation	0.103	-0.041	-0.301	-0.339	-0.007	0.003
	Sig. (1-tailed)	0.269	0.404	0.033	0.019	0.483	0.494
	N	38	38	38	38	38	38
PRELANG	Pearson Correlation	-0.012	-0.029	-0.316	-0.289	-0.043	0.038
	Sig. (1-tailed)	0.472	0.432	0.027	0.039	0.400	0.410
	N	38	38	38	38	38	38
POSTLANG	Pearson Correlation	0.061	-0.038	-0.290	-0.330	0.024	0.047
	Sig. (1-tailed)	0.359	0.411	0.039	0.021	0.443	0.389
	N	38	38	38	38	38	38
PRESOC	Pearson Correlation	0.066	0.165	-0.240	-0.201	-0.252	-0.053
	Sig. (1-tailed)	0.363	0.188	0.096	0.139	0.086	0.388
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.123	0.204	-0.277	-0.195	-0.176	-0.041
	Sig. (1-tailed)	0.254	0.135	0.066	0.146	0.171	0.414
	N	31	31	31	31	31	31

		STACT1	TCHSTR2	SECUR2	ACADEM2	BEHAV2	STPEER2
PDS	Pearson Correlation	-0.247	0.051	0.097	0.502	0.395	0.337
	Sig. (1-tailed)	0.068	0.381	0.281	0.001	0.007	0.019
	N	38	38	38	38	38	38
PRECOMP	Pearson Correlation	-0.617	-0.292	-0.075	-0.220	-0.036	0.065
	Sig. (1-tailed)	0.000	0.038	0.326	0.093	0.416	0.348
	N	38	38	38	38	38	38
POSTCOMP	Pearson Correlation	-0.575	-0.238	-0.024	-0.195	-0.026	0.102
	Sig. (1-tailed)	0.000	0.075	0.443	0.120	0.440	0.272
	N	38	38	38	38	38	38
PRERDG	Pearson Correlation	-0.645	-0.290	-0.029	-0.194	0.001	0.061
	Sig. (1-tailed)	0.000	0.039	0.432	0.121	0.498	0.357
	N	38	38	38	38	38	38
POSTRDG	Pearson Correlation	-0.626	-0.231	-0.002	-0.167	0.021	0.092
	Sig. (1-tailed)	0.000	0.081	0.495	0.158	0.450	0.291
	N	38	38	38	38	38	38
PREMATH	Pearson Correlation	-0.617	-0.308	-0.087	-0.243	-0.054	0.054
	Sig. (1-tailed)	0.000	0.030	0.302	0.071	0.373	0.374
	N	38	38	38	38	38	38
POSTMATH	Pearson Correlation	-0.572	-0.256	-0.041	-0.213	-0.047	0.107
	Sig. (1-tailed)	0.000	0.060	0.404	0.099	0.389	0.262
	N	38	38	38	38	38	38
PRELANG	Pearson Correlation	-0.615	-0.308	-0.092	-0.221	-0.024	0.074
	Sig. (1-tailed)	0.000	0.030	0.291	0.092	0.444	0.330
	N	38	38	38	38	38	38
POSTLANG	Pearson Correlation	-0.563	-0.258	-0.017	-0.201	-0.024	0.120
	Sig. (1-tailed)	0.000	0.059	0.459	0.113	0.443	0.237
	N	38	38	38	38	38	38
PRESOC	Pearson Correlation	-0.361	-0.292	-0.118	-0.282	-0.186	0.106
	Sig. (1-tailed)	0.023	0.055	0.263	0.062	0.159	0.285
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	-0.310	-0.188	-0.067	-0.227	-0.142	0.158
	Sig. (1-tailed)	0.045	0.156	0.360	0.110	0.223	0.199
	N	31	31	31	31	31	31

		MANAGE2	ADMSTR2	GUID2	PARENCO2	STACT2	TSTRGAIN
PDS	Pearson Correlation	0.516	0.299	0.062	0.147	0.447	0.046
	Sig. (1-tailed)	0.000	0.034	0.356	0.189	0.002	0.392
	N	38	38	38	38	38	38
PRECOMP	Pearson Correlation	0.115	-0.099	-0.284	0.072	-0.060	-0.037
	Sig. (1-tailed)	0.246	0.277	0.042	0.333	0.359	0.414
	N	38	38	38	38	38	38
POSTCOMP	Pearson Correlation	0.104	-0.110	-0.235	0.063	-0.053	0.003
	Sig. (1-tailed)	0.268	0.256	0.078	0.355	0.376	0.494
	N	38	38	38	38	38	38
PRERDG	Pearson Correlation	0.125	-0.091	-0.278	0.087	-0.074	-0.062
	Sig. (1-tailed)	0.227	0.293	0.045	0.302	0.330	0.355
	N	38	38	38	38	38	38
POSTRDG	Pearson Correlation	0.124	-0.091	-0.234	0.075	-0.076	-0.009
	Sig. (1-tailed)	0.229	0.294	0.079	0.328	0.325	0.478
	N	38	38	38	38	38	38
PREMATH	Pearson Correlation	0.110	-0.085	-0.289	0.066	-0.064	-0.058
	Sig. (1-tailed)	0.255	0.307	0.039	0.346	0.351	0.364
	N	38	38	38	38	38	38
POSTMATH	Pearson Correlation	0.102	-0.091	-0.244	0.062	-0.043	-0.021
	Sig. (1-tailed)	0.272	0.293	0.070	0.357	0.399	0.450
	N	38	38	38	38	38	38
PRELANG	Pearson Correlation	0.159	-0.079	-0.279	0.109	-0.041	-0.034
	Sig. (1-tailed)	0.169	0.319	0.045	0.257	0.403	0.419
	N	38	38	38	38	38	38
POSTLANG	Pearson Correlation	0.140	-0.094	-0.226	0.097	-0.032	-0.015
	Sig. (1-tailed)	0.201	0.287	0.086	0.281	0.423	0.464
	N	38	38	38	38	38	38
PRESOC	Pearson Correlation	0.117	-0.042	-0.101	0.116	0.050	0.033
	Sig. (1-tailed)	0.266	0.410	0.294	0.267	0.394	0.430
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.121	-0.101	-0.068	0.096	0.035	0.094
	Sig. (1-tailed)	0.259	0.294	0.359	0.304	0.427	0.308
	N	31	31	31	31	31	31

		SECGAIN	ACAGAIN	BEHAGAIN	STPEGAIN	MANAGAIN	ADMGAIN
PDS	Pearson Correlation	-0.192	0.330	0.278	0.440	0.416	0.314
	Sig. (1-tailed)	0.124	0.021	0.045	0.003	0.005	0.027
	N	38	38	38	38	38	38
PRECOMP	Pearson Correlation	0.140	0.154	-0.033	0.078	0.321	0.087
	Sig. (1-tailed)	0.202	0.178	0.421	0.322	0.025	0.302
	N	38	38	38	38	38	38
POSTCOMP	Pearson Correlation	0.172	0.165	-0.053	0.102	0.300	0.089
	Sig. (1-tailed)	0.151	0.161	0.377	0.271	0.034	0.299
	N	38	38	38	38	38	38
PRERDG	Pearson Correlation	0.178	0.168	0.015	0.100	0.327	0.103
	Sig. (1-tailed)	0.142	0.157	0.463	0.275	0.022	0.269
	N	38	38	38	38	38	38
POSTRDG	Pearson Correlation	0.183	0.170	-0.003	0.116	0.305	0.108
	Sig. (1-tailed)	0.135	0.154	0.493	0.244	0.031	0.260
	N	38	38	38	38	38	38
PREMATH	Pearson Correlation	0.127	0.134	-0.054	0.066	0.308	0.105
	Sig. (1-tailed)	0.224	0.211	0.373	0.346	0.030	0.265
	N	38	38	38	38	38	38
POSTMATH	Pearson Correlation	0.143	0.152	-0.084	0.109	0.283	0.110
	Sig. (1-tailed)	0.196	0.181	0.307	0.258	0.043	0.256
	N	38	38	38	38	38	38
PRELANG	Pearson Correlation	0.119	0.138	-0.011	0.075	0.342	0.093
	Sig. (1-tailed)	0.237	0.204	0.475	0.327	0.018	0.290
	N	38	38	38	38	38	38
POSTLANG	Pearson Correlation	0.161	0.137	-0.047	0.119	0.309	0.102
	Sig. (1-tailed)	0.168	0.206	0.390	0.238	0.030	0.272
	N	38	38	38	38	38	38
PRESOC	Pearson Correlation	0.085	0.028	-0.161	0.036	0.216	0.077
	Sig. (1-tailed)	0.325	0.441	0.193	0.423	0.122	0.340
	N	31	31	31	31	31	31
POSTSOC	Pearson Correlation	0.100	0.048	-0.161	0.069	0.237	0.022
	Sig. (1-tailed)	0.296	0.398	0.193	0.356	0.100	0.454
	N	31	31	31	31	31	31

		GUIDGAIN	PARCGAIN	STACGAIN	CLIGAIN
PDS	Pearson Correlation	-0.122	0.026	0.578	0.631
	Sig. (1-tailed)	0.232	0.438	0.000	0.000
	N	38	38	38	38
PRECOMP	Pearson Correlation	-0.240	0.068	0.441	0.178
	Sig. (1-tailed)	0.073	0.343	0.003	0.143
	N	38	38	38	38
POSTCOMP	Pearson Correlation	-0.220	0.058	0.414	0.162
	Sig. (1-tailed)	0.093	0.366	0.005	0.166
	N	38	38	38	38
PRERDG	Pearson Correlation	-0.277	0.051	0.452	0.187
	Sig. (1-tailed)	0.046	0.380	0.002	0.130
	N	38	38	38	38
POSTRDG	Pearson Correlation	-0.269	0.047	0.435	0.185
	Sig. (1-tailed)	0.051	0.389	0.003	0.134
	N	38	38	38	38
PREMATH	Pearson Correlation	-0.231	0.068	0.437	0.174
	Sig. (1-tailed)	0.082	0.344	0.003	0.147
	N	38	38	38	38
POSTMATH	Pearson Correlation	-0.212	0.063	0.420	0.170
	Sig. (1-tailed)	0.101	0.355	0.004	0.153
	N	38	38	38	38
PRELANG	Pearson Correlation	-0.215	0.088	0.455	0.190
	Sig. (1-tailed)	0.097	0.300	0.002	0.126
	N	38	38	38	38
POSTLANG	Pearson Correlation	-0.219	0.069	0.421	0.186
	Sig. (1-tailed)	0.094	0.340	0.004	0.132
	N	38	38	38	38
PRESOC	Pearson Correlation	0.120	0.156	0.297	0.065
	Sig. (1-tailed)	0.261	0.201	0.052	0.364
	N	31	31	31	31
POSTSOC	Pearson Correlation	0.087	0.127	0.247	0.035
	Sig. (1-tailed)	0.321	0.248	0.090	0.426
	N	31	31	31	31

		PDS	PRECOMP	POSTCOMP	PRERDG	POSTRDG	PREMATH
PRESCIE	Pearson Correlation	-0.060	0.989	0.983	0.977	0.966	0.976
	Sig. (1-tailed)	0.374	0.000	0.000	0.000	0.000	0.000
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	-0.074	0.971	0.991	0.964	0.972	0.967
	Sig. (1-tailed)	0.347	0.000	0.000	0.000	0.000	0.000
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.014	0.327	0.466	0.312	0.441	0.331
	Sig. (1-tailed)	0.467	0.022	0.002	0.028	0.003	0.021
	N	38	38	38	38	38	38
RDGGAIN	Pearson Correlation	0.118	0.129	0.248	0.091	0.260	0.137
	Sig. (1-tailed)	0.240	0.220	0.066	0.294	0.057	0.206
	N	38	38	38	38	38	38
MATHGAIN	Pearson Correlation	0.081	0.412	0.526	0.376	0.481	0.397
	Sig. (1-tailed)	0.315	0.005	0.000	0.010	0.001	0.007
	N	38	38	38	38	38	38
LANGGAIN	Pearson Correlation	0.018	0.446	0.545	0.442	0.525	0.449
	Sig. (1-tailed)	0.457	0.002	0.000	0.003	0.000	0.002
	N	38	38	38	38	38	38
SSGAIN	Pearson Correlation	0.005	0.411	0.543	0.436	0.564	0.409
	Sig. (1-tailed)	0.490	0.011	0.001	0.007	0.000	0.011
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	-0.086	0.351	0.464	0.365	0.449	0.384
	Sig. (1-tailed)	0.323	0.026	0.004	0.022	0.006	0.017
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	0.139	-0.508	-0.476	-0.481	-0.446	-0.487
	Sig. (1-tailed)	0.203	0.001	0.001	0.001	0.003	0.001
	N	38	38	38	38	38	38
POSTCLIM	Pearson Correlation	0.555	-0.287	-0.271	-0.258	-0.231	-0.272
	Sig. (1-tailed)	0.000	0.040	0.050	0.059	0.081	0.049
	N	38	38	38	38	38	38
TCHSTR1	Pearson Correlation	-0.009	-0.341	-0.335	-0.295	-0.305	-0.327
	Sig. (1-tailed)	0.480	0.018	0.020	0.036	0.031	0.023
	N	38	38	38	38	38	38

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
PRESCIE	Pearson Correlation	0.970	0.963	0.977	0.980	0.969	1
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	.
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	0.980	0.937	0.973	0.961	0.973	0.978
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.473	0.267	0.411	0.416	0.586	0.448
	Sig. (1-tailed)	0.001	0.053	0.005	0.010	0.000	0.006
	N	38	38	38	31	31	31
RDGGAIN	Pearson Correlation	0.258	0.095	0.206	0.234	0.383	0.301
	Sig. (1-tailed)	0.059	0.286	0.107	0.103	0.017	0.050
	N	38	38	38	31	31	31
MATHGAIN	Pearson Correlation	0.556	0.370	0.490	0.542	0.674	0.566
	Sig. (1-tailed)	0.000	0.011	0.001	0.001	0.000	0.000
	N	38	38	38	31	31	31
LANGGAIN	Pearson Correlation	0.550	0.357	0.537	0.423	0.533	0.442
	Sig. (1-tailed)	0.000	0.014	0.000	0.009	0.001	0.006
	N	38	38	38	31	31	31
SSGAIN	Pearson Correlation	0.537	0.339	0.469	0.405	0.606	0.459
	Sig. (1-tailed)	0.001	0.031	0.004	0.012	0.000	0.005
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	0.466	0.298	0.405	0.338	0.437	0.335
	Sig. (1-tailed)	0.004	0.052	0.012	0.031	0.007	0.033
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	-0.446	-0.518	-0.455	-0.502	-0.457	-0.476
	Sig. (1-tailed)	0.003	0.000	0.002	0.002	0.005	0.003
	N	38	38	38	31	31	31
POSTCLIM	Pearson Correlation	-0.241	-0.286	-0.238	-0.351	-0.337	-0.330
	Sig. (1-tailed)	0.073	0.041	0.075	0.026	0.032	0.035
	N	38	38	38	31	31	31
TCHSTR1	Pearson Correlation	-0.320	-0.369	-0.332	-0.474	-0.432	-0.460
	Sig. (1-tailed)	0.025	0.011	0.021	0.004	0.008	0.005
	N	38	38	38	31	31	31

		POSTSCIE	COMGAIN	RDGGAIN	MATHGAIN	LANGGAIN	SSGAIN
PRESCIE	Pearson Correlation	0.978	0.448	0.301	0.566	0.442	0.459
	Sig. (1-tailed)	0.000	0.006	0.050	0.000	0.006	0.005
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	1	0.571	0.381	0.642	0.520	0.539
	Sig. (1-tailed)	.	0.000	0.017	0.000	0.001	0.001
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.571	1	0.802	0.879	0.795	0.881
	Sig. (1-tailed)	0.000	.	0.000	0.000	0.000	0.000
	N	31	38	38	38	38	31
RDGGAIN	Pearson Correlation	0.381	0.802	1	0.679	0.563	0.706
	Sig. (1-tailed)	0.017	0.000	.	0.000	0.000	0.000
	N	31	38	38	38	38	31
MATHGAIN	Pearson Correlation	0.642	0.879	0.679	1	0.729	0.798
	Sig. (1-tailed)	0.000	0.000	0.000	.	0.000	0.000
	N	31	38	38	38	38	31
LANGGAIN	Pearson Correlation	0.520	0.795	0.563	0.729	1	0.652
	Sig. (1-tailed)	0.001	0.000	0.000	0.000	.	0.000
	N	31	38	38	38	38	31
SSGAIN	Pearson Correlation	0.539	0.881	0.706	0.798	0.652	1
	Sig. (1-tailed)	0.001	0.000	0.000	0.000	0.000	.
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	0.525	0.752	0.491	0.589	0.544	0.563
	Sig. (1-tailed)	0.001	0.000	0.003	0.000	0.001	0.000
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	-0.468	0.002	0.121	-0.023	0.061	-0.080
	Sig. (1-tailed)	0.004	0.496	0.234	0.446	0.358	0.334
	N	31	38	38	38	38	31
POSTCLIM	Pearson Correlation	-0.359	-0.018	0.111	0.027	0.095	-0.123
	Sig. (1-tailed)	0.024	0.458	0.253	0.437	0.286	0.255
	N	31	38	38	38	38	31
TCHSTR1	Pearson Correlation	-0.446	-0.093	-0.108	-0.120	0.003	-0.077
	Sig. (1-tailed)	0.006	0.289	0.260	0.236	0.493	0.340
	N	31	38	38	38	38	31

		SCIGAIN	PRECLIM	POSTCLIM	TCHSTR1	SECUR1	ACADEM1
PRESCIE	Pearson Correlation	0.335	-0.476	-0.330	-0.460	-0.217	-0.475
	Sig. (1-tailed)	0.033	0.003	0.035	0.005	0.120	0.003
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	0.525	-0.468	-0.359	-0.446	-0.245	-0.498
	Sig. (1-tailed)	0.001	0.004	0.024	0.006	0.092	0.002
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.752	0.002	-0.018	-0.093	-0.013	-0.122
	Sig. (1-tailed)	0.000	0.496	0.458	0.289	0.468	0.232
	N	31	38	38	38	38	38
RDGGAIN	Pearson Correlation	0.491	0.121	0.111	-0.108	0.107	0.117
	Sig. (1-tailed)	0.003	0.234	0.253	0.260	0.262	0.242
	N	31	38	38	38	38	38
MATHGAIN	Pearson Correlation	0.589	-0.023	0.027	-0.120	0.036	-0.214
	Sig. (1-tailed)	0.000	0.446	0.437	0.236	0.415	0.099
	N	31	38	38	38	38	38
LANGGAIN	Pearson Correlation	0.544	0.061	0.095	0.003	0.029	-0.104
	Sig. (1-tailed)	0.001	0.358	0.286	0.493	0.431	0.266
	N	31	38	38	38	38	38
SSGAIN	Pearson Correlation	0.563	-0.080	-0.123	-0.077	0.025	-0.055
	Sig. (1-tailed)	0.000	0.334	0.255	0.340	0.446	0.384
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	1	-0.169	-0.273	-0.138	-0.222	-0.312
	Sig. (1-tailed)	.	0.182	0.068	0.230	0.115	0.044
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	-0.169	1	0.719	0.666	0.632	0.590
	Sig. (1-tailed)	0.182	.	0.000	0.000	0.000	0.000
	N	31	38	38	38	38	38
POSTCLIM	Pearson Correlation	-0.273	0.719	1	0.357	0.724	0.514
	Sig. (1-tailed)	0.068	0.000	.	0.014	0.000	0.000
	N	31	38	38	38	38	38
TCHSTR1	Pearson Correlation	-0.138	0.666	0.357	1	0.355	0.375
	Sig. (1-tailed)	0.230	0.000	0.014	.	0.014	0.010
	N	31	38	38	38	38	38

		BEHAV1	STPEER1	MANAGE1	ADMSTR1	GUID1	PARENCO1
PRESCIE	Pearson Correlation	0.121	0.199	-0.273	-0.162	-0.247	-0.047
	Sig. (1-tailed)	0.259	0.142	0.069	0.192	0.091	0.401
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	0.168	0.224	-0.299	-0.238	-0.209	-0.060
	Sig. (1-tailed)	0.184	0.113	0.051	0.099	0.130	0.373
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.338	0.091	-0.030	-0.255	0.189	0.003
	Sig. (1-tailed)	0.019	0.294	0.429	0.061	0.128	0.493
	N	38	38	38	38	38	38
RDGGAIN	Pearson Correlation	0.374	0.137	0.128	-0.096	0.247	-0.064
	Sig. (1-tailed)	0.010	0.206	0.222	0.284	0.068	0.351
	N	38	38	38	38	38	38
MATHGAIN	Pearson Correlation	0.371	0.023	-0.018	-0.245	0.125	0.001
	Sig. (1-tailed)	0.011	0.445	0.456	0.069	0.227	0.497
	N	38	38	38	38	38	38
LANGGAIN	Pearson Correlation	0.334	-0.055	-0.021	-0.321	0.291	0.061
	Sig. (1-tailed)	0.020	0.371	0.450	0.025	0.038	0.359
	N	38	38	38	38	38	38
SSGAIN	Pearson Correlation	0.261	0.240	-0.268	-0.081	0.170	0.023
	Sig. (1-tailed)	0.078	0.096	0.073	0.333	0.181	0.452
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	0.263	0.201	-0.236	-0.411	0.063	-0.081
	Sig. (1-tailed)	0.076	0.139	0.100	0.011	0.368	0.333
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	0.462	-0.108	0.552	0.155	-0.023	0.054
	Sig. (1-tailed)	0.002	0.259	0.000	0.176	0.446	0.373
	N	38	38	38	38	38	38
POSTCLIM	Pearson Correlation	0.307	-0.335	0.435	0.087	0.037	0.107
	Sig. (1-tailed)	0.030	0.020	0.003	0.301	0.412	0.261
	N	38	38	38	38	38	38
TCHSTR1	Pearson Correlation	0.383	-0.188	0.105	0.052	-0.120	-0.050
	Sig. (1-tailed)	0.009	0.129	0.266	0.379	0.237	0.382
	N	38	38	38	38	38	38

		STACT1	TCHSTR2	SECUR2	ACADEM2	BEHAV2	STPEER2
PRESCIE	Pearson Correlation	-0.355	-0.221	-0.083	-0.217	-0.147	0.160
	Sig. (1-tailed)	0.025	0.116	0.329	0.120	0.214	0.196
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	-0.282	-0.164	-0.029	-0.220	-0.154	0.163
	Sig. (1-tailed)	0.062	0.189	0.438	0.118	0.205	0.191
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.017	0.220	0.294	0.065	0.049	0.253
	Sig. (1-tailed)	0.459	0.092	0.037	0.349	0.385	0.062
	N	38	38	38	38	38	38
RDGGAIN	Pearson Correlation	-0.004	0.290	0.151	0.124	0.118	0.189
	Sig. (1-tailed)	0.490	0.039	0.183	0.230	0.241	0.128
	N	38	38	38	38	38	38
MATHGAIN	Pearson Correlation	-0.070	0.113	0.192	0.031	0.010	0.293
	Sig. (1-tailed)	0.339	0.249	0.124	0.426	0.477	0.037
	N	38	38	38	38	38	38
LANGGAIN	Pearson Correlation	-0.034	0.093	0.309	-0.008	-0.012	0.249
	Sig. (1-tailed)	0.419	0.290	0.030	0.481	0.472	0.066
	N	38	38	38	38	38	38
SSGAIN	Pearson Correlation	0.015	0.261	0.142	0.071	0.078	0.257
	Sig. (1-tailed)	0.468	0.078	0.223	0.351	0.338	0.081
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	0.173	0.159	0.205	-0.106	-0.092	0.084
	Sig. (1-tailed)	0.176	0.196	0.134	0.285	0.311	0.327
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	0.446	0.144	0.155	-0.009	-0.135	0.216
	Sig. (1-tailed)	0.003	0.194	0.177	0.480	0.210	0.096
	N	38	38	38	38	38	38
POSTCLIM	Pearson Correlation	-0.012	0.021	0.245	0.303	0.154	0.346
	Sig. (1-tailed)	0.472	0.450	0.069	0.032	0.178	0.017
	N	38	38	38	38	38	38
TCHSTR1	Pearson Correlation	0.356	-0.012	-0.086	-0.256	-0.151	-0.120
	Sig. (1-tailed)	0.014	0.471	0.304	0.060	0.183	0.236
	N	38	38	38	38	38	38

		MANAGE2	ADMSTR2	GUID2	PARENCO2	STACT2	TSTRGAIN
PRESCIE	Pearson Correlation	0.093	-0.071	-0.117	0.076	0.016	0.083
	Sig. (1-tailed)	0.309	0.352	0.266	0.342	0.467	0.328
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	0.045	-0.114	-0.082	0.051	0.022	0.121
	Sig. (1-tailed)	0.405	0.271	0.330	0.393	0.454	0.258
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	-0.026	-0.109	0.198	-0.033	0.023	0.232
	Sig. (1-tailed)	0.438	0.257	0.117	0.421	0.445	0.081
	N	38	38	38	38	38	38
RDGGAIN	Pearson Correlation	0.014	-0.012	0.208	-0.056	-0.027	0.296
	Sig. (1-tailed)	0.466	0.473	0.105	0.369	0.437	0.035
	N	38	38	38	38	38	38
MATHGAIN	Pearson Correlation	0.009	-0.073	0.090	0.008	0.077	0.161
	Sig. (1-tailed)	0.479	0.332	0.296	0.482	0.324	0.167
	N	38	38	38	38	38	38
LANGGAIN	Pearson Correlation	-0.020	-0.107	0.121	-0.007	0.023	0.073
	Sig. (1-tailed)	0.453	0.261	0.235	0.484	0.446	0.331
	N	38	38	38	38	38	38
SSGAIN	Pearson Correlation	0.075	-0.253	0.081	-0.020	-0.035	0.257
	Sig. (1-tailed)	0.343	0.085	0.333	0.457	0.425	0.082
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	-0.176	-0.224	0.104	-0.081	0.035	0.209
	Sig. (1-tailed)	0.172	0.113	0.289	0.332	0.427	0.130
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	0.073	0.141	0.272	0.039	0.001	-0.271
	Sig. (1-tailed)	0.331	0.200	0.049	0.408	0.497	0.050
	N	38	38	38	38	38	38
POSTCLIM	Pearson Correlation	0.385	0.427	0.184	0.076	0.240	-0.191
	Sig. (1-tailed)	0.009	0.004	0.135	0.324	0.073	0.126
	N	38	38	38	38	38	38
TCHSTR1	Pearson Correlation	-0.113	-0.138	0.136	-0.192	-0.139	-0.591
	Sig. (1-tailed)	0.249	0.205	0.207	0.124	0.202	0.000
	N	38	38	38	38	38	38

		SECGAIN	ACAGAIN	BEHAGAIN	STPEGAIN	MANAGAIN	ADMGAIN
PRESCIE	Pearson Correlation	0.076	0.083	-0.164	0.073	0.210	0.030
	Sig. (1-tailed)	0.343	0.329	0.189	0.348	0.128	0.437
	N	31	31	31	31	31	31
POSTSCIE	Pearson Correlation	0.139	0.094	-0.192	0.066	0.181	0.035
	Sig. (1-tailed)	0.227	0.307	0.150	0.361	0.165	0.426
	N	31	31	31	31	31	31
COMGAIN	Pearson Correlation	0.261	0.130	-0.134	0.186	-0.003	0.045
	Sig. (1-tailed)	0.057	0.218	0.211	0.132	0.493	0.394
	N	38	38	38	38	38	38
RDGGAIN	Pearson Correlation	0.060	0.038	-0.104	0.111	-0.070	0.044
	Sig. (1-tailed)	0.361	0.410	0.267	0.253	0.338	0.396
	N	38	38	38	38	38	38
MATHGAIN	Pearson Correlation	0.141	0.155	-0.178	0.247	0.019	0.072
	Sig. (1-tailed)	0.199	0.176	0.142	0.068	0.454	0.333
	N	38	38	38	38	38	38
LANGGAIN	Pearson Correlation	0.246	0.056	-0.175	0.238	-0.003	0.084
	Sig. (1-tailed)	0.068	0.370	0.147	0.075	0.492	0.307
	N	38	38	38	38	38	38
SSGAIN	Pearson Correlation	0.103	0.096	-0.082	0.147	0.193	-0.179
	Sig. (1-tailed)	0.291	0.304	0.330	0.214	0.150	0.168
	N	31	31	31	31	31	31
SCIGAIN	Pearson Correlation	0.320	0.087	-0.200	0.003	-0.041	0.037
	Sig. (1-tailed)	0.039	0.321	0.140	0.494	0.412	0.422
	N	31	31	31	31	31	31
PRECLIM	Pearson Correlation	-0.279	-0.361	-0.325	0.230	-0.293	0.041
	Sig. (1-tailed)	0.045	0.013	0.023	0.082	0.037	0.403
	N	38	38	38	38	38	38
POSTCLIM	Pearson Correlation	-0.262	-0.043	-0.045	0.431	0.052	0.345
	Sig. (1-tailed)	0.056	0.399	0.394	0.003	0.378	0.017
	N	38	38	38	38	38	38
TCHSTR1	Pearson Correlation	-0.305	-0.448	-0.297	-0.032	-0.166	-0.157
	Sig. (1-tailed)	0.031	0.002	0.035	0.424	0.160	0.173
	N	38	38	38	38	38	38

		GUIDGAIN	PARCGAIN	STACGAIN	CLIGAIN
PRESCIE	Pearson Correlation	0.100	0.111	0.261	0.066
	Sig. (1-tailed)	0.297	0.277	0.078	0.362
	N	31	31	31	31
POSTSCIE	Pearson Correlation	0.101	0.093	0.216	0.015
	Sig. (1-tailed)	0.295	0.309	0.122	0.467
	N	31	31	31	31
COMGAIN	Pearson Correlation	0.034	-0.037	0.006	-0.028
	Sig. (1-tailed)	0.420	0.413	0.486	0.435
	N	38	38	38	38
RDGGAIN	Pearson Correlation	-0.001	-0.015	-0.020	0.019
	Sig. (1-tailed)	0.498	0.464	0.454	0.456
	N	38	38	38	38
MATHGAIN	Pearson Correlation	-0.014	0.007	0.121	0.064
	Sig. (1-tailed)	0.466	0.483	0.235	0.352
	N	38	38	38	38
LANGGAIN	Pearson Correlation	-0.112	-0.048	0.047	0.065
	Sig. (1-tailed)	0.251	0.387	0.390	0.350
	N	38	38	38	38
SSGAIN	Pearson Correlation	-0.068	-0.036	-0.043	-0.085
	Sig. (1-tailed)	0.358	0.424	0.409	0.325
	N	31	31	31	31
SCIGAIN	Pearson Correlation	0.048	-0.031	-0.089	-0.200
	Sig. (1-tailed)	0.398	0.434	0.318	0.140
	N	31	31	31	31
PRECLIM	Pearson Correlation	0.259	0.004	-0.354	-0.129
	Sig. (1-tailed)	0.058	0.491	0.015	0.221
	N	38	38	38	38
POSTCLIM	Pearson Correlation	0.135	0.007	0.214	0.597
	Sig. (1-tailed)	0.210	0.484	0.099	0.000
	N	38	38	38	38
TCHSTR1	Pearson Correlation	0.211	-0.166	-0.402	-0.259
	Sig. (1-tailed)	0.102	0.160	0.006	0.059
	N	38	38	38	38

		PDS	PRECOMP	POSTCOMP	PRERDG	POSTRDG	PREMATH
SECUR1	Pearson Correlation	0.423	-0.314	-0.296	-0.312	-0.284	-0.309
	Sig. (1-tailed)	0.004	0.028	0.036	0.028	0.042	0.030
	N	38	38	38	38	38	38
ACADEM1	Pearson Correlation	0.181	-0.578	-0.561	-0.565	-0.528	-0.579
	Sig. (1-tailed)	0.138	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
BEHAV1	Pearson Correlation	-0.003	0.017	0.069	-0.030	0.035	0.033
	Sig. (1-tailed)	0.493	0.461	0.340	0.430	0.416	0.422
	N	38	38	38	38	38	38
STPEER1	Pearson Correlation	-0.377	-0.053	-0.035	-0.120	-0.093	-0.050
	Sig. (1-tailed)	0.010	0.376	0.417	0.236	0.290	0.383
	N	38	38	38	38	38	38
MANAGE1	Pearson Correlation	0.049	-0.342	-0.325	-0.338	-0.306	-0.329
	Sig. (1-tailed)	0.385	0.018	0.023	0.019	0.031	0.022
	N	38	38	38	38	38	38
ADMSTR1	Pearson Correlation	-0.065	-0.312	-0.333	-0.328	-0.334	-0.321
	Sig. (1-tailed)	0.349	0.028	0.021	0.022	0.020	0.025
	N	38	38	38	38	38	38
GUID1	Pearson Correlation	0.236	-0.016	0.015	0.040	0.081	-0.035
	Sig. (1-tailed)	0.077	0.462	0.464	0.405	0.314	0.417
	N	38	38	38	38	38	38
PARENCO1	Pearson Correlation	0.188	0.012	0.011	0.058	0.045	0.003
	Sig. (1-tailed)	0.130	0.473	0.473	0.364	0.393	0.494
	N	38	38	38	38	38	38
STACT1	Pearson Correlation	-0.247	-0.617	-0.575	-0.645	-0.626	-0.617
	Sig. (1-tailed)	0.068	0.000	0.000	0.000	0.000	0.000
	N	38	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.051	-0.292	-0.238	-0.290	-0.231	-0.308
	Sig. (1-tailed)	0.381	0.038	0.075	0.039	0.081	0.030
	N	38	38	38	38	38	38
SECUR2	Pearson Correlation	0.097	-0.075	-0.024	-0.029	-0.002	-0.087
	Sig. (1-tailed)	0.281	0.326	0.443	0.432	0.495	0.302
	N	38	38	38	38	38	38

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
SECUR1	Pearson Correlation	-0.273	-0.305	-0.269	-0.276	-0.234	-0.217
	Sig. (1-tailed)	0.049	0.031	0.051	0.066	0.103	0.120
	N	38	38	38	31	31	31
ACADEM1	Pearson Correlation	-0.566	-0.554	-0.523	-0.479	-0.431	-0.475
	Sig. (1-tailed)	0.000	0.000	0.000	0.003	0.008	0.003
	N	38	38	38	31	31	31
BEHAV1	Pearson Correlation	0.103	-0.012	0.061	0.066	0.123	0.121
	Sig. (1-tailed)	0.269	0.472	0.359	0.363	0.254	0.259
	N	38	38	38	31	31	31
STPEER1	Pearson Correlation	-0.041	-0.029	-0.038	0.165	0.204	0.199
	Sig. (1-tailed)	0.404	0.432	0.411	0.188	0.135	0.142
	N	38	38	38	31	31	31
MANAGE1	Pearson Correlation	-0.301	-0.316	-0.290	-0.240	-0.277	-0.273
	Sig. (1-tailed)	0.033	0.027	0.039	0.096	0.066	0.069
	N	38	38	38	31	31	31
ADMSTR1	Pearson Correlation	-0.339	-0.289	-0.330	-0.201	-0.195	-0.162
	Sig. (1-tailed)	0.019	0.039	0.021	0.139	0.146	0.192
	N	38	38	38	31	31	31
GUID1	Pearson Correlation	-0.007	-0.043	0.024	-0.252	-0.176	-0.247
	Sig. (1-tailed)	0.483	0.400	0.443	0.086	0.171	0.091
	N	38	38	38	31	31	31
PARENCO1	Pearson Correlation	0.003	0.038	0.047	-0.053	-0.041	-0.047
	Sig. (1-tailed)	0.494	0.410	0.389	0.388	0.414	0.401
	N	38	38	38	31	31	31
STACT1	Pearson Correlation	-0.572	-0.615	-0.563	-0.361	-0.310	-0.355
	Sig. (1-tailed)	0.000	0.000	0.000	0.023	0.045	0.025
	N	38	38	38	31	31	31
TCHSTR2	Pearson Correlation	-0.256	-0.308	-0.258	-0.292	-0.188	-0.221
	Sig. (1-tailed)	0.060	0.030	0.059	0.055	0.156	0.116
	N	38	38	38	31	31	31
SECUR2	Pearson Correlation	-0.041	-0.092	-0.017	-0.118	-0.067	-0.083
	Sig. (1-tailed)	0.404	0.291	0.459	0.263	0.360	0.329
	N	38	38	38	31	31	31

		POSTSCIE	COMGAIN	RDGGAIN	MATHGAIN	LANGGAIN	SSGAIN
SECUR1	Pearson Correlation	-0.245	-0.013	0.107	0.036	0.029	0.025
	Sig. (1-tailed)	0.092	0.468	0.262	0.415	0.431	0.446
	N	31	38	38	38	38	31
ACADEM1	Pearson Correlation	-0.498	-0.122	0.117	-0.214	-0.104	-0.055
	Sig. (1-tailed)	0.002	0.232	0.242	0.099	0.266	0.384
	N	31	38	38	38	38	31
BEHAV1	Pearson Correlation	0.168	0.338	0.374	0.371	0.334	0.261
	Sig. (1-tailed)	0.184	0.019	0.010	0.011	0.020	0.078
	N	31	38	38	38	38	31
STPEER1	Pearson Correlation	0.224	0.091	0.137	0.023	-0.055	0.240
	Sig. (1-tailed)	0.113	0.294	0.206	0.445	0.371	0.096
	N	31	38	38	38	38	31
MANAGE1	Pearson Correlation	-0.299	-0.030	0.128	-0.018	-0.021	-0.268
	Sig. (1-tailed)	0.051	0.429	0.222	0.456	0.450	0.073
	N	31	38	38	38	38	31
ADMSTR1	Pearson Correlation	-0.238	-0.255	-0.096	-0.245	-0.321	-0.081
	Sig. (1-tailed)	0.099	0.061	0.284	0.069	0.025	0.333
	N	31	38	38	38	38	31
GUID1	Pearson Correlation	-0.209	0.189	0.247	0.125	0.291	0.170
	Sig. (1-tailed)	0.130	0.128	0.068	0.227	0.038	0.181
	N	31	38	38	38	38	31
PARENCO1	Pearson Correlation	-0.060	0.003	-0.064	0.001	0.061	0.023
	Sig. (1-tailed)	0.373	0.493	0.351	0.497	0.359	0.452
	N	31	38	38	38	38	31
STACT1	Pearson Correlation	-0.282	0.017	-0.004	-0.070	-0.034	0.015
	Sig. (1-tailed)	0.062	0.459	0.490	0.339	0.419	0.468
	N	31	38	38	38	38	31
TCHSTR2	Pearson Correlation	-0.164	0.220	0.290	0.113	0.093	0.261
	Sig. (1-tailed)	0.189	0.092	0.039	0.249	0.290	0.078
	N	31	38	38	38	38	31
SECUR2	Pearson Correlation	-0.029	0.294	0.151	0.192	0.309	0.142
	Sig. (1-tailed)	0.438	0.037	0.183	0.124	0.030	0.223
	N	31	38	38	38	38	31

		SCIGAIN	PRECLIM	POSTCLIM	TCHSTR1	SECUR1	ACADEM1
SECUR1	Pearson Correlation	-0.222	0.632	0.724	0.355	1	0.560
	Sig. (1-tailed)	0.115	0.000	0.000	0.014	.	0.000
	N	31	38	38	38	38	38
ACADEM1	Pearson Correlation	-0.312	0.590	0.514	0.375	0.560	1
	Sig. (1-tailed)	0.044	0.000	0.000	0.010	0.000	.
	N	31	38	38	38	38	38
BEHAV1	Pearson Correlation	0.263	0.462	0.307	0.383	0.340	0.170
	Sig. (1-tailed)	0.076	0.002	0.030	0.009	0.018	0.154
	N	31	38	38	38	38	38
STPEER1	Pearson Correlation	0.201	-0.108	-0.335	-0.188	-0.016	0.150
	Sig. (1-tailed)	0.139	0.259	0.020	0.129	0.463	0.185
	N	31	38	38	38	38	38
MANAGE1	Pearson Correlation	-0.236	0.552	0.435	0.105	0.211	0.483
	Sig. (1-tailed)	0.100	0.000	0.003	0.266	0.101	0.001
	N	31	38	38	38	38	38
ADMSTR1	Pearson Correlation	-0.411	0.155	0.087	0.052	0.366	0.303
	Sig. (1-tailed)	0.011	0.176	0.301	0.379	0.012	0.032
	N	31	38	38	38	38	38
GUID1	Pearson Correlation	0.063	-0.023	0.037	-0.120	-0.143	0.159
	Sig. (1-tailed)	0.368	0.446	0.412	0.237	0.196	0.171
	N	31	38	38	38	38	38
PARENCO1	Pearson Correlation	-0.081	0.054	0.107	-0.050	0.265	0.096
	Sig. (1-tailed)	0.333	0.373	0.261	0.382	0.054	0.284
	N	31	38	38	38	38	38
STACT1	Pearson Correlation	0.173	0.446	-0.012	0.356	0.045	0.196
	Sig. (1-tailed)	0.176	0.003	0.472	0.014	0.395	0.119
	N	31	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.159	0.144	0.021	-0.012	0.128	0.239
	Sig. (1-tailed)	0.196	0.194	0.450	0.471	0.222	0.074
	N	31	38	38	38	38	38
SECUR2	Pearson Correlation	0.205	0.155	0.245	-0.086	0.143	0.230
	Sig. (1-tailed)	0.134	0.177	0.069	0.304	0.196	0.083
	N	31	38	38	38	38	38

		BEHAV1	STPEER1	MANAGE1	ADMSTR1	GUID1	PARENCO1
SECUR1	Pearson Correlation	0.340	-0.016	0.211	0.366	-0.143	0.265
	Sig. (1-tailed)	0.018	0.463	0.101	0.012	0.196	0.054
	N	38	38	38	38	38	38
ACADEM1	Pearson Correlation	0.170	0.150	0.483	0.303	0.159	0.096
	Sig. (1-tailed)	0.154	0.185	0.001	0.032	0.171	0.284
	N	38	38	38	38	38	38
BEHAV1	Pearson Correlation	1	0.156	0.088	-0.242	-0.124	-0.458
	Sig. (1-tailed)	.	0.174	0.299	0.072	0.229	0.002
	N	38	38	38	38	38	38
STPEER1	Pearson Correlation	0.156	1	0.125	0.278	-0.188	-0.285
	Sig. (1-tailed)	0.174	.	0.227	0.046	0.129	0.042
	N	38	38	38	38	38	38
MANAGE1	Pearson Correlation	0.088	0.125	1	0.270	0.025	0.111
	Sig. (1-tailed)	0.299	0.227	.	0.050	0.440	0.254
	N	38	38	38	38	38	38
ADMSTR1	Pearson Correlation	-0.242	0.278	0.270	1	-0.159	0.207
	Sig. (1-tailed)	0.072	0.046	0.050	.	0.170	0.107
	N	38	38	38	38	38	38
GUID1	Pearson Correlation	-0.124	-0.188	0.025	-0.159	1	0.208
	Sig. (1-tailed)	0.229	0.129	0.440	0.170	.	0.105
	N	38	38	38	38	38	38
PARENCO1	Pearson Correlation	-0.458	-0.285	0.111	0.207	0.208	1
	Sig. (1-tailed)	0.002	0.042	0.254	0.107	0.105	.
	N	38	38	38	38	38	38
STACT1	Pearson Correlation	0.161	0.187	0.197	0.093	-0.004	-0.074
	Sig. (1-tailed)	0.166	0.130	0.117	0.290	0.490	0.330
	N	38	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.248	0.012	-0.080	0.093	0.540	0.021
	Sig. (1-tailed)	0.067	0.471	0.316	0.290	0.000	0.450
	N	38	38	38	38	38	38
SECUR2	Pearson Correlation	-0.107	-0.198	0.150	-0.225	0.303	0.409
	Sig. (1-tailed)	0.262	0.116	0.185	0.087	0.032	0.005
	N	38	38	38	38	38	38

		STACT1	TCHSTR2	SECUR2	ACADEM2	BEHAV2	STPEER2
SECUR1	Pearson Correlation	0.045	0.128	0.143	0.289	0.216	0.386
	Sig. (1-tailed)	0.395	0.222	0.196	0.039	0.097	0.008
	N	38	38	38	38	38	38
ACADEM1	Pearson Correlation	0.196	0.239	0.230	0.117	0.229	-0.095
	Sig. (1-tailed)	0.119	0.074	0.083	0.243	0.084	0.284
	N	38	38	38	38	38	38
BEHAV1	Pearson Correlation	0.161	0.248	-0.107	-0.252	-0.369	0.012
	Sig. (1-tailed)	0.166	0.067	0.262	0.063	0.011	0.471
	N	38	38	38	38	38	38
STPEER1	Pearson Correlation	0.187	0.012	-0.198	-0.291	-0.291	-0.134
	Sig. (1-tailed)	0.130	0.471	0.116	0.038	0.038	0.212
	N	38	38	38	38	38	38
MANAGE1	Pearson Correlation	0.197	-0.080	0.150	-0.096	-0.100	0.087
	Sig. (1-tailed)	0.117	0.316	0.185	0.284	0.275	0.303
	N	38	38	38	38	38	38
ADMSTR1	Pearson Correlation	0.093	0.093	-0.225	0.246	0.182	0.302
	Sig. (1-tailed)	0.290	0.290	0.087	0.069	0.137	0.032
	N	38	38	38	38	38	38
GUID1	Pearson Correlation	-0.004	0.540	0.303	0.473	0.342	0.243
	Sig. (1-tailed)	0.490	0.000	0.032	0.001	0.018	0.071
	N	38	38	38	38	38	38
PARENCO1	Pearson Correlation	-0.074	0.021	0.409	0.373	0.630	0.378
	Sig. (1-tailed)	0.330	0.450	0.005	0.011	0.000	0.010
	N	38	38	38	38	38	38
STACT1	Pearson Correlation	1	0.274	0.057	-0.066	-0.372	0.209
	Sig. (1-tailed)	.	0.048	0.367	0.347	0.011	0.104
	N	38	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.274	1	0.320	0.612	0.347	0.386
	Sig. (1-tailed)	0.048	.	0.025	0.000	0.016	0.008
	N	38	38	38	38	38	38
SECUR2	Pearson Correlation	0.057	0.320	1	0.449	0.466	0.202
	Sig. (1-tailed)	0.367	0.025	.	0.002	0.002	0.112
	N	38	38	38	38	38	38

		MANAGE2	ADMSTR2	GUID2	PARENCO2	STACT2	TSTRGAIN
SECUR1	Pearson Correlation	0.473	0.327	0.009	0.159	0.033	-0.103
	Sig. (1-tailed)	0.001	0.023	0.478	0.170	0.423	0.269
	N	38	38	38	38	38	38
ACADEM1	Pearson Correlation	0.261	0.262	0.299	-0.041	-0.194	-0.025
	Sig. (1-tailed)	0.057	0.056	0.034	0.404	0.122	0.440
	N	38	38	38	38	38	38
BEHAV1	Pearson Correlation	-0.127	0.170	0.143	-0.490	-0.209	-0.023
	Sig. (1-tailed)	0.224	0.154	0.197	0.001	0.104	0.445
	N	38	38	38	38	38	38
STPEER1	Pearson Correlation	0.023	-0.025	0.205	0.129	-0.153	0.119
	Sig. (1-tailed)	0.445	0.440	0.109	0.221	0.180	0.238
	N	38	38	38	38	38	38
MANAGE1	Pearson Correlation	0.152	0.428	0.424	0.310	0.085	-0.125
	Sig. (1-tailed)	0.182	0.004	0.004	0.029	0.306	0.227
	N	38	38	38	38	38	38
ADMSTR1	Pearson Correlation	0.391	0.174	0.109	0.349	0.136	0.045
	Sig. (1-tailed)	0.008	0.148	0.257	0.016	0.207	0.395
	N	38	38	38	38	38	38
GUID1	Pearson Correlation	0.183	-0.061	0.266	0.098	0.194	0.505
	Sig. (1-tailed)	0.136	0.358	0.053	0.280	0.121	0.001
	N	38	38	38	38	38	38
PARENCO1	Pearson Correlation	0.253	0.047	-0.114	0.389	0.033	0.046
	Sig. (1-tailed)	0.063	0.390	0.247	0.008	0.421	0.391
	N	38	38	38	38	38	38
STACT1	Pearson Correlation	-0.241	-0.335	0.374	0.099	0.266	0.014
	Sig. (1-tailed)	0.072	0.020	0.010	0.277	0.054	0.466
	N	38	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.035	-0.169	0.161	-0.190	-0.028	0.814
	Sig. (1-tailed)	0.418	0.156	0.167	0.126	0.434	0.000
	N	38	38	38	38	38	38
SECUR2	Pearson Correlation	-0.141	0.006	0.244	-0.015	-0.165	0.308
	Sig. (1-tailed)	0.199	0.487	0.070	0.464	0.162	0.030
	N	38	38	38	38	38	38

		SECGAIN	ACAGAIN	BEHAGAIN	STPEGAIN	MANAGAIN	ADMGAIN
SECUR1	Pearson Correlation	-0.529	-0.082	-0.019	0.342	0.273	0.093
	Sig. (1-tailed)	0.000	0.312	0.455	0.018	0.049	0.289
	N	38	38	38	38	38	38
ACADEM1	Pearson Correlation	-0.168	-0.496	0.076	-0.141	-0.087	0.070
	Sig. (1-tailed)	0.157	0.001	0.326	0.199	0.303	0.339
	N	38	38	38	38	38	38
BEHAV1	Pearson Correlation	-0.313	-0.322	-0.759	-0.050	-0.167	0.295
	Sig. (1-tailed)	0.028	0.024	0.000	0.384	0.158	0.036
	N	38	38	38	38	38	38
STPEER1	Pearson Correlation	-0.160	-0.344	-0.282	-0.503	-0.061	-0.182
	Sig. (1-tailed)	0.169	0.017	0.043	0.001	0.358	0.137
	N	38	38	38	38	38	38
MANAGE1	Pearson Correlation	-0.009	-0.372	-0.114	0.027	-0.516	0.242
	Sig. (1-tailed)	0.478	0.011	0.247	0.436	0.000	0.072
	N	38	38	38	38	38	38
ADMSTR1	Pearson Correlation	-0.431	0.034	0.248	0.156	0.164	-0.411
	Sig. (1-tailed)	0.003	0.421	0.067	0.174	0.163	0.005
	N	38	38	38	38	38	38
GUID1	Pearson Correlation	0.353	0.318	0.302	0.285	0.142	0.035
	Sig. (1-tailed)	0.015	0.026	0.033	0.042	0.197	0.418
	N	38	38	38	38	38	38
PARENCO1	Pearson Correlation	0.178	0.269	0.671	0.440	0.148	-0.075
	Sig. (1-tailed)	0.142	0.051	0.000	0.003	0.188	0.327
	N	38	38	38	38	38	38
STACT1	Pearson Correlation	0.020	-0.175	-0.342	0.110	-0.337	-0.363
	Sig. (1-tailed)	0.453	0.147	0.018	0.256	0.019	0.012
	N	38	38	38	38	38	38
TCHSTR2	Pearson Correlation	0.191	0.392	0.120	0.332	0.082	-0.209
	Sig. (1-tailed)	0.125	0.007	0.237	0.021	0.313	0.104
	N	38	38	38	38	38	38
SECUR2	Pearson Correlation	0.764	0.255	0.380	0.253	-0.219	0.134
	Sig. (1-tailed)	0.000	0.061	0.009	0.063	0.093	0.212
	N	38	38	38	38	38	38

		GUIDGAIN	PARCGAIN	STACGAIN	CLIGAIN
SECUR1	Pearson Correlation	0.116	-0.014	-0.008	0.304
	Sig. (1-tailed)	0.244	0.468	0.482	0.032
	N	38	38	38	38
ACADEM1	Pearson Correlation	0.146	-0.108	-0.321	0.052
	Sig. (1-tailed)	0.191	0.259	0.025	0.377
	N	38	38	38	38
BEHAV1	Pearson Correlation	0.220	-0.200	-0.307	-0.095
	Sig. (1-tailed)	0.092	0.114	0.030	0.285
	N	38	38	38	38
STPEER1	Pearson Correlation	0.323	0.328	-0.279	-0.353
	Sig. (1-tailed)	0.024	0.022	0.045	0.015
	N	38	38	38	38
MANAGE1	Pearson Correlation	0.358	0.248	-0.085	-0.016
	Sig. (1-tailed)	0.014	0.066	0.305	0.462
	N	38	38	38	38
ADMSTR1	Pearson Correlation	0.216	0.223	0.042	-0.054
	Sig. (1-tailed)	0.096	0.089	0.401	0.373
	N	38	38	38	38
GUID1	Pearson Correlation	-0.516	-0.039	0.169	0.079
	Sig. (1-tailed)	0.000	0.407	0.156	0.318
	N	38	38	38	38
PARENCO1	Pearson Correlation	-0.258	-0.274	0.087	0.090
	Sig. (1-tailed)	0.059	0.048	0.302	0.295
	N	38	38	38	38
STACT1	Pearson Correlation	0.335	0.154	-0.571	-0.531
	Sig. (1-tailed)	0.020	0.179	0.000	0.000
	N	38	38	38	38
TCHSTR2	Pearson Correlation	-0.263	-0.213	-0.242	-0.136
	Sig. (1-tailed)	0.055	0.100	0.071	0.208
	N	38	38	38	38
SECUR2	Pearson Correlation	-0.012	-0.294	-0.185	0.171
	Sig. (1-tailed)	0.471	0.037	0.133	0.153
	N	38	38	38	38

		PDS	PRECOMP	POSTCOMP	PRERDG	POSTRDG	PREMATH
ACADEM2	Pearson Correlation	0.502	-0.220	-0.195	-0.194	-0.167	-0.243
	Sig. (1-tailed)	0.001	0.093	0.120	0.121	0.158	0.071
	N	38	38	38	38	38	38
BEHAV2	Pearson Correlation	0.395	-0.036	-0.026	0.001	0.021	-0.054
	Sig. (1-tailed)	0.007	0.416	0.440	0.498	0.450	0.373
	N	38	38	38	38	38	38
STPEER2	Pearson Correlation	0.337	0.065	0.102	0.061	0.092	0.054
	Sig. (1-tailed)	0.019	0.348	0.272	0.357	0.291	0.374
	N	38	38	38	38	38	38
MANAGE2	Pearson Correlation	0.516	0.115	0.104	0.125	0.124	0.110
	Sig. (1-tailed)	0.000	0.246	0.268	0.227	0.229	0.255
	N	38	38	38	38	38	38
ADMSTR2	Pearson Correlation	0.299	-0.099	-0.110	-0.091	-0.091	-0.085
	Sig. (1-tailed)	0.034	0.277	0.256	0.293	0.294	0.307
	N	38	38	38	38	38	38
GUID2	Pearson Correlation	0.062	-0.284	-0.235	-0.278	-0.234	-0.289
	Sig. (1-tailed)	0.356	0.042	0.078	0.045	0.079	0.039
	N	38	38	38	38	38	38
PARENCO2	Pearson Correlation	0.147	0.072	0.063	0.087	0.075	0.066
	Sig. (1-tailed)	0.189	0.333	0.355	0.302	0.328	0.346
	N	38	38	38	38	38	38
STACT2	Pearson Correlation	0.447	-0.060	-0.053	-0.074	-0.076	-0.064
	Sig. (1-tailed)	0.002	0.359	0.376	0.330	0.325	0.351
	N	38	38	38	38	38	38
TSTRGAIN	Pearson Correlation	0.046	-0.037	0.003	-0.062	-0.009	-0.058
	Sig. (1-tailed)	0.392	0.414	0.494	0.355	0.478	0.364
	N	38	38	38	38	38	38
SECGAIN	Pearson Correlation	-0.192	0.140	0.172	0.178	0.183	0.127
	Sig. (1-tailed)	0.124	0.202	0.151	0.142	0.135	0.224
	N	38	38	38	38	38	38
ACAGAIN	Pearson Correlation	0.330	0.154	0.165	0.168	0.170	0.134
	Sig. (1-tailed)	0.021	0.178	0.161	0.157	0.154	0.211
	N	38	38	38	38	38	38

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
ACADEM2	Pearson Correlation	-0.213	-0.221	-0.201	-0.282	-0.227	-0.217
	Sig. (1-tailed)	0.099	0.092	0.113	0.062	0.110	0.120
	N	38	38	38	31	31	31
BEHAV2	Pearson Correlation	-0.047	-0.024	-0.024	-0.186	-0.142	-0.147
	Sig. (1-tailed)	0.389	0.444	0.443	0.159	0.223	0.214
	N	38	38	38	31	31	31
STPEER2	Pearson Correlation	0.107	0.074	0.120	0.106	0.158	0.160
	Sig. (1-tailed)	0.262	0.330	0.237	0.285	0.199	0.196
	N	38	38	38	31	31	31
MANAGE2	Pearson Correlation	0.102	0.159	0.140	0.117	0.121	0.093
	Sig. (1-tailed)	0.272	0.169	0.201	0.266	0.259	0.309
	N	38	38	38	31	31	31
ADMSTR2	Pearson Correlation	-0.091	-0.079	-0.094	-0.042	-0.101	-0.071
	Sig. (1-tailed)	0.293	0.319	0.287	0.410	0.294	0.352
	N	38	38	38	31	31	31
GUID2	Pearson Correlation	-0.244	-0.279	-0.226	-0.101	-0.068	-0.117
	Sig. (1-tailed)	0.070	0.045	0.086	0.294	0.359	0.266
	N	38	38	38	31	31	31
PARENCO2	Pearson Correlation	0.062	0.109	0.097	0.116	0.096	0.076
	Sig. (1-tailed)	0.357	0.257	0.281	0.267	0.304	0.342
	N	38	38	38	31	31	31
STACT2	Pearson Correlation	-0.043	-0.041	-0.032	0.050	0.035	0.016
	Sig. (1-tailed)	0.399	0.403	0.423	0.394	0.427	0.467
	N	38	38	38	31	31	31
TSTRGAIN	Pearson Correlation	-0.021	-0.034	-0.015	0.033	0.094	0.083
	Sig. (1-tailed)	0.450	0.419	0.464	0.430	0.308	0.328
	N	38	38	38	31	31	31
SECGAIN	Pearson Correlation	0.143	0.119	0.161	0.085	0.100	0.076
	Sig. (1-tailed)	0.196	0.237	0.168	0.325	0.296	0.343
	N	38	38	38	31	31	31
ACAGAIN	Pearson Correlation	0.152	0.138	0.137	0.028	0.048	0.083
	Sig. (1-tailed)	0.181	0.204	0.206	0.441	0.398	0.329
	N	38	38	38	31	31	31

		POSTSCIE	COMGAIN	RDGGAIN	MATHGAIN	LANGGAIN	SSGAIN
ACADEM2	Pearson Correlation	-0.220	0.065	0.124	0.031	-0.008	0.071
	Sig. (1-tailed)	0.118	0.349	0.230	0.426	0.481	0.351
	N	31	38	38	38	38	31
BEHAV2	Pearson Correlation	-0.154	0.049	0.118	0.010	-0.012	0.078
	Sig. (1-tailed)	0.205	0.385	0.241	0.477	0.472	0.338
	N	31	38	38	38	38	31
STPEER2	Pearson Correlation	0.163	0.253	0.189	0.293	0.249	0.257
	Sig. (1-tailed)	0.191	0.062	0.128	0.037	0.066	0.081
	N	31	38	38	38	38	31
MANAGE2	Pearson Correlation	0.045	-0.026	0.014	0.009	-0.020	0.075
	Sig. (1-tailed)	0.405	0.438	0.466	0.479	0.453	0.343
	N	31	38	38	38	38	31
ADMSTR2	Pearson Correlation	-0.114	-0.109	-0.012	-0.073	-0.107	-0.253
	Sig. (1-tailed)	0.271	0.257	0.473	0.332	0.261	0.085
	N	31	38	38	38	38	31
GUID2	Pearson Correlation	-0.082	0.198	0.208	0.090	0.121	0.081
	Sig. (1-tailed)	0.330	0.117	0.105	0.296	0.235	0.333
	N	31	38	38	38	38	31
PARENCO2	Pearson Correlation	0.051	-0.033	-0.056	0.008	-0.007	-0.020
	Sig. (1-tailed)	0.393	0.421	0.369	0.482	0.484	0.457
	N	31	38	38	38	38	31
STACT2	Pearson Correlation	0.022	0.023	-0.027	0.077	0.023	-0.035
	Sig. (1-tailed)	0.454	0.445	0.437	0.324	0.446	0.425
	N	31	38	38	38	38	31
TSTRGAIN	Pearson Correlation	0.121	0.232	0.296	0.161	0.073	0.257
	Sig. (1-tailed)	0.258	0.081	0.035	0.167	0.331	0.082
	N	31	38	38	38	38	31
SECGAIN	Pearson Correlation	0.139	0.261	0.060	0.141	0.246	0.103
	Sig. (1-tailed)	0.227	0.057	0.361	0.199	0.068	0.291
	N	31	38	38	38	38	31
ACAGAIN	Pearson Correlation	0.094	0.130	0.038	0.155	0.056	0.096
	Sig. (1-tailed)	0.307	0.218	0.410	0.176	0.370	0.304
	N	31	38	38	38	38	31

		SCIGAIN	PRECLIM	POSTCLIM	TCHSTR1	SECUR1	ACADEM1
ACADEM2	Pearson Correlation	-0.106	-0.009	0.303	-0.256	0.289	0.117
	Sig. (1-tailed)	0.285	0.480	0.032	0.060	0.039	0.243
	N	31	38	38	38	38	38
BEHAV2	Pearson Correlation	-0.092	-0.135	0.154	-0.151	0.216	0.229
	Sig. (1-tailed)	0.311	0.210	0.178	0.183	0.097	0.084
	N	31	38	38	38	38	38
STPEER2	Pearson Correlation	0.084	0.216	0.346	-0.120	0.386	-0.095
	Sig. (1-tailed)	0.327	0.096	0.017	0.236	0.008	0.284
	N	31	38	38	38	38	38
MANAGE2	Pearson Correlation	-0.176	0.073	0.385	-0.113	0.473	0.261
	Sig. (1-tailed)	0.172	0.331	0.009	0.249	0.001	0.057
	N	31	38	38	38	38	38
ADMSTR2	Pearson Correlation	-0.224	0.141	0.427	-0.138	0.327	0.262
	Sig. (1-tailed)	0.113	0.200	0.004	0.205	0.023	0.056
	N	31	38	38	38	38	38
GUID2	Pearson Correlation	0.104	0.272	0.184	0.136	0.009	0.299
	Sig. (1-tailed)	0.289	0.049	0.135	0.207	0.478	0.034
	N	31	38	38	38	38	38
PARENCO2	Pearson Correlation	-0.081	0.039	0.076	-0.192	0.159	-0.041
	Sig. (1-tailed)	0.332	0.408	0.324	0.124	0.170	0.404
	N	31	38	38	38	38	38
STACT2	Pearson Correlation	0.035	0.001	0.240	-0.139	0.033	-0.194
	Sig. (1-tailed)	0.427	0.497	0.073	0.202	0.423	0.122
	N	31	38	38	38	38	38
TSTRGAIN	Pearson Correlation	0.209	-0.271	-0.191	-0.591	-0.103	-0.025
	Sig. (1-tailed)	0.130	0.050	0.126	0.000	0.269	0.440
	N	31	38	38	38	38	38
SECGAIN	Pearson Correlation	0.320	-0.279	-0.262	-0.305	-0.529	-0.168
	Sig. (1-tailed)	0.039	0.045	0.056	0.031	0.000	0.157
	N	31	38	38	38	38	38
ACAGAIN	Pearson Correlation	0.087	-0.361	-0.043	-0.448	-0.082	-0.496
	Sig. (1-tailed)	0.321	0.013	0.399	0.002	0.312	0.001
	N	31	38	38	38	38	38

		BEHAV1	STPEER1	MANAGE1	ADMSTR1	GUID1	PARENCO1
ACADEM2	Pearson Correlation	-0.252	-0.291	-0.096	0.246	0.473	0.373
	Sig. (1-tailed)	0.063	0.038	0.284	0.069	0.001	0.011
	N	38	38	38	38	38	38
BEHAV2	Pearson Correlation	-0.369	-0.291	-0.100	0.182	0.342	0.630
	Sig. (1-tailed)	0.011	0.038	0.275	0.137	0.018	0.000
	N	38	38	38	38	38	38
STPEER2	Pearson Correlation	0.012	-0.134	0.087	0.302	0.243	0.378
	Sig. (1-tailed)	0.471	0.212	0.303	0.032	0.071	0.010
	N	38	38	38	38	38	38
MANAGE2	Pearson Correlation	-0.127	0.023	0.152	0.391	0.183	0.253
	Sig. (1-tailed)	0.224	0.445	0.182	0.008	0.136	0.063
	N	38	38	38	38	38	38
ADMSTR2	Pearson Correlation	0.170	-0.025	0.428	0.174	-0.061	0.047
	Sig. (1-tailed)	0.154	0.440	0.004	0.148	0.358	0.390
	N	38	38	38	38	38	38
GUID2	Pearson Correlation	0.143	0.205	0.424	0.109	0.266	-0.114
	Sig. (1-tailed)	0.197	0.109	0.004	0.257	0.053	0.247
	N	38	38	38	38	38	38
PARENCO2	Pearson Correlation	-0.490	0.129	0.310	0.349	0.098	0.389
	Sig. (1-tailed)	0.001	0.221	0.029	0.016	0.280	0.008
	N	38	38	38	38	38	38
STACT2	Pearson Correlation	-0.209	-0.153	0.085	0.136	0.194	0.033
	Sig. (1-tailed)	0.104	0.180	0.306	0.207	0.121	0.421
	N	38	38	38	38	38	38
TSTRGAIN	Pearson Correlation	-0.023	0.119	-0.125	0.045	0.505	0.046
	Sig. (1-tailed)	0.445	0.238	0.227	0.395	0.001	0.391
	N	38	38	38	38	38	38
SECGAIN	Pearson Correlation	-0.313	-0.160	-0.009	-0.431	0.353	0.178
	Sig. (1-tailed)	0.028	0.169	0.478	0.003	0.015	0.142
	N	38	38	38	38	38	38
ACAGAIN	Pearson Correlation	-0.322	-0.344	-0.372	0.034	0.318	0.269
	Sig. (1-tailed)	0.024	0.017	0.011	0.421	0.026	0.051
	N	38	38	38	38	38	38

		STACT1	TCHSTR2	SECUR2	ACADEM2	BEHAV2	STPEER2
ACADEM2	Pearson Correlation	-0.066	0.612	0.449	1	0.694	0.616
	Sig. (1-tailed)	0.347	0.000	0.002	.	0.000	0.000
	N	38	38	38	38	38	38
BEHAV2	Pearson Correlation	-0.372	0.347	0.466	0.694	1	0.167
	Sig. (1-tailed)	0.011	0.016	0.002	0.000	.	0.158
	N	38	38	38	38	38	38
STPEER2	Pearson Correlation	0.209	0.386	0.202	0.616	0.167	1
	Sig. (1-tailed)	0.104	0.008	0.112	0.000	0.158	.
	N	38	38	38	38	38	38
MANAGE2	Pearson Correlation	-0.241	0.035	-0.141	0.337	0.172	0.551
	Sig. (1-tailed)	0.072	0.418	0.199	0.019	0.152	0.000
	N	38	38	38	38	38	38
ADMSTR2	Pearson Correlation	-0.335	-0.169	0.006	0.078	0.046	-0.001
	Sig. (1-tailed)	0.020	0.156	0.487	0.321	0.392	0.497
	N	38	38	38	38	38	38
GUID2	Pearson Correlation	0.374	0.161	0.244	0.103	-0.107	0.161
	Sig. (1-tailed)	0.010	0.167	0.070	0.268	0.260	0.167
	N	38	38	38	38	38	38
PARENCO2	Pearson Correlation	0.099	-0.190	-0.015	0.097	0.008	0.493
	Sig. (1-tailed)	0.277	0.126	0.464	0.282	0.482	0.001
	N	38	38	38	38	38	38
STACT2	Pearson Correlation	0.266	-0.028	-0.165	0.346	-0.085	0.623
	Sig. (1-tailed)	0.054	0.434	0.162	0.017	0.307	0.000
	N	38	38	38	38	38	38
TSTRGAIN	Pearson Correlation	0.014	0.814	0.308	0.643	0.367	0.381
	Sig. (1-tailed)	0.466	0.000	0.030	0.000	0.012	0.009
	N	38	38	38	38	38	38
SECGAIN	Pearson Correlation	0.020	0.191	0.764	0.196	0.259	-0.078
	Sig. (1-tailed)	0.453	0.125	0.000	0.119	0.058	0.321
	N	38	38	38	38	38	38
ACAGAIN	Pearson Correlation	-0.175	0.392	0.255	0.804	0.470	0.596
	Sig. (1-tailed)	0.147	0.007	0.061	0.000	0.001	0.000
	N	38	38	38	38	38	38

		MANAGE2	ADMSTR2	GUID2	PARENCO2	STACT2	TSTRGAIN
ACADEM2	Pearson Correlation	0.337	0.078	0.103	0.097	0.346	0.643
	Sig. (1-tailed)	0.019	0.321	0.268	0.282	0.017	0.000
	N	38	38	38	38	38	38
BEHAV2	Pearson Correlation	0.172	0.046	-0.107	0.008	-0.085	0.367
	Sig. (1-tailed)	0.152	0.392	0.260	0.482	0.307	0.012
	N	38	38	38	38	38	38
STPEER2	Pearson Correlation	0.551	-0.001	0.161	0.493	0.623	0.381
	Sig. (1-tailed)	0.000	0.497	0.167	0.001	0.000	0.009
	N	38	38	38	38	38	38
MANAGE2	Pearson Correlation	1	0.384	0.115	0.571	0.520	0.094
	Sig. (1-tailed)	.	0.009	0.246	0.000	0.000	0.288
	N	38	38	38	38	38	38
ADMSTR2	Pearson Correlation	0.384	1	0.383	-0.093	0.035	-0.056
	Sig. (1-tailed)	0.009	.	0.009	0.290	0.418	0.369
	N	38	38	38	38	38	38
GUID2	Pearson Correlation	0.115	0.383	1	0.084	0.228	0.051
	Sig. (1-tailed)	0.246	0.009	.	0.308	0.084	0.381
	N	38	38	38	38	38	38
PARENCO2	Pearson Correlation	0.571	-0.093	0.084	1	0.525	-0.042
	Sig. (1-tailed)	0.000	0.290	0.308	.	0.000	0.402
	N	38	38	38	38	38	38
STACT2	Pearson Correlation	0.520	0.035	0.228	0.525	1	0.059
	Sig. (1-tailed)	0.000	0.418	0.084	0.000	.	0.364
	N	38	38	38	38	38	38
TSTRGAIN	Pearson Correlation	0.094	-0.056	0.051	-0.042	0.059	1
	Sig. (1-tailed)	0.288	0.369	0.381	0.402	0.364	.
	N	38	38	38	38	38	38
SECGAIN	Pearson Correlation	-0.429	-0.208	0.203	-0.117	-0.162	0.332
	Sig. (1-tailed)	0.004	0.105	0.111	0.243	0.165	0.021
	N	38	38	38	38	38	38
ACAGAIN	Pearson Correlation	0.139	-0.089	-0.088	0.109	0.418	0.577
	Sig. (1-tailed)	0.203	0.298	0.299	0.257	0.004	0.000
	N	38	38	38	38	38	38

		SECGAIN	ACAGAIN	BEHAGAIN	STPEGAIN	MANAGAIN	ADMGAIN
ACADEM2	Pearson Correlation	0.196	0.804	0.612	0.650	0.354	-0.068
	Sig. (1-tailed)	0.119	0.000	0.000	0.000	0.015	0.342
	N	38	38	38	38	38	38
BEHAV2	Pearson Correlation	0.259	0.470	0.886	0.258	0.213	-0.061
	Sig. (1-tailed)	0.058	0.001	0.000	0.059	0.099	0.357
	N	38	38	38	38	38	38
STPEER2	Pearson Correlation	-0.078	0.596	0.111	0.924	0.422	-0.174
	Sig. (1-tailed)	0.321	0.000	0.253	0.000	0.004	0.148
	N	38	38	38	38	38	38
MANAGE2	Pearson Correlation	-0.429	0.139	0.184	0.472	0.769	0.132
	Sig. (1-tailed)	0.004	0.203	0.135	0.001	0.000	0.216
	N	38	38	38	38	38	38
ADMSTR2	Pearson Correlation	-0.208	-0.089	-0.052	0.009	0.055	0.826
	Sig. (1-tailed)	0.105	0.298	0.378	0.479	0.371	0.000
	N	38	38	38	38	38	38
GUID2	Pearson Correlation	0.203	-0.088	-0.147	0.061	-0.175	0.292
	Sig. (1-tailed)	0.111	0.299	0.190	0.357	0.147	0.038
	N	38	38	38	38	38	38
PARENCO2	Pearson Correlation	-0.117	0.109	0.250	0.380	0.294	-0.285
	Sig. (1-tailed)	0.243	0.257	0.065	0.009	0.036	0.041
	N	38	38	38	38	38	38
STACT2	Pearson Correlation	-0.162	0.418	0.045	0.602	0.396	-0.046
	Sig. (1-tailed)	0.165	0.004	0.394	0.000	0.007	0.392
	N	38	38	38	38	38	38
TSTRGAIN	Pearson Correlation	0.332	0.577	0.269	0.286	0.162	-0.078
	Sig. (1-tailed)	0.021	0.000	0.051	0.041	0.165	0.322
	N	38	38	38	38	38	38
SECGAIN	Pearson Correlation	1	0.272	0.338	-0.006	-0.366	0.054
	Sig. (1-tailed)	.	0.049	0.019	0.486	0.012	0.374
	N	38	38	38	38	38	38
ACAGAIN	Pearson Correlation	0.272	1	0.490	0.652	0.361	-0.101
	Sig. (1-tailed)	0.049	.	0.001	0.000	0.013	0.272
	N	38	38	38	38	38	38

		GUIDGAIN	PARCGAIN	STACGAIN	CLIGAIN
ACADEM2	Pearson Correlation	-0.264	-0.153	0.347	0.442
	Sig. (1-tailed)	0.055	0.179	0.016	0.003
	N	38	38	38	38
BEHAV2	Pearson Correlation	-0.353	-0.421	0.225	0.376
	Sig. (1-tailed)	0.015	0.004	0.087	0.010
	N	38	38	38	38
STPEER2	Pearson Correlation	-0.040	0.257	0.364	0.244
	Sig. (1-tailed)	0.406	0.059	0.012	0.070
	N	38	38	38	38
MANAGE2	Pearson Correlation	-0.036	0.424	0.635	0.464
	Sig. (1-tailed)	0.416	0.004	0.000	0.002
	N	38	38	38	38
ADMSTR2	Pearson Correlation	0.386	-0.128	0.297	0.447
	Sig. (1-tailed)	0.008	0.221	0.035	0.002
	N	38	38	38	38
GUID2	Pearson Correlation	0.688	0.166	-0.104	-0.052
	Sig. (1-tailed)	0.000	0.160	0.267	0.378
	N	38	38	38	38
PARENCO2	Pearson Correlation	0.001	0.779	0.368	0.064
	Sig. (1-tailed)	0.498	0.000	0.011	0.351
	N	38	38	38	38
STACT2	Pearson Correlation	0.056	0.526	0.639	0.341
	Sig. (1-tailed)	0.368	0.000	0.000	0.018
	N	38	38	38	38
TSTRGAIN	Pearson Correlation	-0.335	-0.075	0.039	0.041
	Sig. (1-tailed)	0.020	0.327	0.409	0.404
	N	38	38	38	38
SECGAIN	Pearson Correlation	-0.086	-0.243	-0.154	-0.052
	Sig. (1-tailed)	0.304	0.070	0.178	0.379
	N	38	38	38	38
ACAGAIN	Pearson Correlation	-0.318	-0.069	0.495	0.355
	Sig. (1-tailed)	0.026	0.340	0.001	0.014
	N	38	38	38	38

		PDS	PRECOMP	POSTCOMP	PRERDG	POSTRDG	PREMATH
BEHAGAIN	Pearson Correlation	0.278	-0.033	-0.053	0.015	-0.003	-0.054
	Sig. (1-tailed)	0.045	0.421	0.377	0.463	0.493	0.373
	N	38	38	38	38	38	38
STPEGAIN	Pearson Correlation	0.440	0.078	0.102	0.100	0.116	0.066
	Sig. (1-tailed)	0.003	0.322	0.271	0.275	0.244	0.346
	N	38	38	38	38	38	38
MANAGAIN	Pearson Correlation	0.416	0.321	0.300	0.327	0.305	0.308
	Sig. (1-tailed)	0.005	0.025	0.034	0.022	0.031	0.030
	N	38	38	38	38	38	38
ADMGAIN	Pearson Correlation	0.314	0.087	0.089	0.103	0.108	0.105
	Sig. (1-tailed)	0.027	0.302	0.299	0.269	0.260	0.265
	N	38	38	38	38	38	38
GUIDGAIN	Pearson Correlation	-0.122	-0.240	-0.220	-0.277	-0.269	-0.231
	Sig. (1-tailed)	0.232	0.073	0.093	0.046	0.051	0.082
	N	38	38	38	38	38	38
PARCGAIN	Pearson Correlation	0.026	0.068	0.058	0.051	0.047	0.068
	Sig. (1-tailed)	0.438	0.343	0.366	0.380	0.389	0.344
	N	38	38	38	38	38	38
STACGAIN	Pearson Correlation	0.578	0.441	0.414	0.452	0.435	0.437
	Sig. (1-tailed)	0.000	0.003	0.005	0.002	0.003	0.003
	N	38	38	38	38	38	38
CLIGAIN	Pearson Correlation	0.631	0.178	0.162	0.187	0.185	0.174
	Sig. (1-tailed)	0.000	0.143	0.166	0.130	0.134	0.147
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

		POSTMATH	PRELANG	POSTLANG	PRESOC	POSTSOC	PRESCIE
BEHAGAIN	Pearson Correlation	-0.084	-0.011	-0.047	-0.161	-0.161	-0.164
	Sig. (1-tailed)	0.307	0.475	0.390	0.193	0.193	0.189
	N	38	38	38	31	31	31
STPEGAIN	Pearson Correlation	0.109	0.075	0.119	0.036	0.069	0.073
	Sig. (1-tailed)	0.258	0.327	0.238	0.423	0.356	0.348
	N	38	38	38	31	31	31
MANAGAIN	Pearson Correlation	0.283	0.342	0.309	0.216	0.237	0.210
	Sig. (1-tailed)	0.043	0.018	0.030	0.122	0.100	0.128
	N	38	38	38	31	31	31
ADMGAIN	Pearson Correlation	0.110	0.093	0.102	0.077	0.022	0.030
	Sig. (1-tailed)	0.256	0.290	0.272	0.340	0.454	0.437
	N	38	38	38	31	31	31
GUIDGAIN	Pearson Correlation	-0.212	-0.215	-0.219	0.120	0.087	0.100
	Sig. (1-tailed)	0.101	0.097	0.094	0.261	0.321	0.297
	N	38	38	38	31	31	31
PARCGAIN	Pearson Correlation	0.063	0.088	0.069	0.156	0.127	0.111
	Sig. (1-tailed)	0.355	0.300	0.340	0.201	0.248	0.277
	N	38	38	38	31	31	31
STACGAIN	Pearson Correlation	0.420	0.455	0.421	0.297	0.247	0.261
	Sig. (1-tailed)	0.004	0.002	0.004	0.052	0.090	0.078
	N	38	38	38	31	31	31
CLIGAIN	Pearson Correlation	0.170	0.190	0.186	0.065	0.035	0.066
	Sig. (1-tailed)	0.153	0.126	0.132	0.364	0.426	0.362
	N	38	38	38	31	31	31

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		POSTSCIE	COMGAIN	RDGGAIN	MATHGAIN	LANGGAIN	SSGAIN
BEHAGAIN	Pearson Correlation	-0.192	-0.134	-0.104	-0.178	-0.175	-0.082
	Sig. (1-tailed)	0.150	0.211	0.267	0.142	0.147	0.330
	N	31	38	38	38	38	31
STPEGAIN	Pearson Correlation	0.066	0.186	0.111	0.247	0.238	0.147
	Sig. (1-tailed)	0.361	0.132	0.253	0.068	0.075	0.214
	N	31	38	38	38	38	31
MANAGAIN	Pearson Correlation	0.181	-0.003	-0.070	0.019	-0.003	0.193
	Sig. (1-tailed)	0.165	0.493	0.338	0.454	0.492	0.150
	N	31	38	38	38	38	31
ADMGAIN	Pearson Correlation	0.035	0.045	0.044	0.072	0.084	-0.179
	Sig. (1-tailed)	0.426	0.394	0.396	0.333	0.307	0.168
	N	31	38	38	38	38	31
GUIDGAIN	Pearson Correlation	0.101	0.034	-0.001	-0.014	-0.112	-0.068
	Sig. (1-tailed)	0.295	0.420	0.498	0.466	0.251	0.358
	N	31	38	38	38	38	31
PARCGAIN	Pearson Correlation	0.093	-0.037	-0.015	0.007	-0.048	-0.036
	Sig. (1-tailed)	0.309	0.413	0.464	0.483	0.387	0.424
	N	31	38	38	38	38	31
STACGAIN	Pearson Correlation	0.216	0.006	-0.020	0.121	0.047	-0.043
	Sig. (1-tailed)	0.122	0.486	0.454	0.235	0.390	0.409
	N	31	38	38	38	38	31
CLIGAIN	Pearson Correlation	0.015	-0.028	0.019	0.064	0.065	-0.085
	Sig. (1-tailed)	0.467	0.435	0.456	0.352	0.350	0.325
	N	31	38	38	38	38	31

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		SCIGAIN	PRECLIM	POSTCLIM	TCHSTR1	SECUR1	ACADEM1
BEHAGAIN	Pearson Correlation	-0.200	-0.325	-0.045	-0.297	-0.019	0.076
	Sig. (1-tailed)	0.140	0.023	0.394	0.035	0.455	0.326
	N	31	38	38	38	38	38
STPEGAIN	Pearson Correlation	0.003	0.230	0.431	-0.032	0.342	-0.141
	Sig. (1-tailed)	0.494	0.082	0.003	0.424	0.018	0.199
	N	31	38	38	38	38	38
MANAGAIN	Pearson Correlation	-0.041	-0.293	0.052	-0.166	0.273	-0.087
	Sig. (1-tailed)	0.412	0.037	0.378	0.160	0.049	0.303
	N	31	38	38	38	38	38
ADMGAIN	Pearson Correlation	0.037	0.041	0.345	-0.157	0.093	0.070
	Sig. (1-tailed)	0.422	0.403	0.017	0.173	0.289	0.339
	N	31	38	38	38	38	38
GUIDGAIN	Pearson Correlation	0.048	0.259	0.135	0.211	0.116	0.146
	Sig. (1-tailed)	0.398	0.058	0.210	0.102	0.244	0.191
	N	31	38	38	38	38	38
PARCGAIN	Pearson Correlation	-0.031	0.004	0.007	-0.166	-0.014	-0.108
	Sig. (1-tailed)	0.434	0.491	0.484	0.160	0.468	0.259
	N	31	38	38	38	38	38
STACGAIN	Pearson Correlation	-0.089	-0.354	0.214	-0.402	-0.008	-0.321
	Sig. (1-tailed)	0.318	0.015	0.099	0.006	0.482	0.025
	N	31	38	38	38	38	38
CLIGAIN	Pearson Correlation	-0.200	-0.129	0.597	-0.259	0.304	0.052
	Sig. (1-tailed)	0.140	0.221	0.000	0.059	0.032	0.377
	N	31	38	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		BEHAV1	STPEER1	MANAGE1	ADMSTR1	GUID1	PARENCO1
BEHAGAIN	Pearson Correlation	-0.759	-0.282	-0.114	0.248	0.302	0.671
	Sig. (1-tailed)	0.000	0.043	0.247	0.067	0.033	0.000
	N	38	38	38	38	38	38
STPEGAIN	Pearson Correlation	-0.050	-0.503	0.027	0.156	0.285	0.440
	Sig. (1-tailed)	0.384	0.001	0.436	0.174	0.042	0.003
	N	38	38	38	38	38	38
MANAGAIN	Pearson Correlation	-0.167	-0.061	-0.516	0.164	0.142	0.148
	Sig. (1-tailed)	0.158	0.358	0.000	0.163	0.197	0.188
	N	38	38	38	38	38	38
ADMGAIN	Pearson Correlation	0.295	-0.182	0.242	-0.411	0.035	-0.075
	Sig. (1-tailed)	0.036	0.137	0.072	0.005	0.418	0.327
	N	38	38	38	38	38	38
GUIDGAIN	Pearson Correlation	0.220	0.323	0.358	0.216	-0.516	-0.258
	Sig. (1-tailed)	0.092	0.024	0.014	0.096	0.000	0.059
	N	38	38	38	38	38	38
PARCGAIN	Pearson Correlation	-0.200	0.328	0.248	0.223	-0.039	-0.274
	Sig. (1-tailed)	0.114	0.022	0.066	0.089	0.407	0.048
	N	38	38	38	38	38	38
STACGAIN	Pearson Correlation	-0.307	-0.279	-0.085	0.042	0.169	0.087
	Sig. (1-tailed)	0.030	0.045	0.305	0.401	0.156	0.302
	N	38	38	38	38	38	38
CLIGAIN	Pearson Correlation	-0.095	-0.353	-0.016	-0.054	0.079	0.090
	Sig. (1-tailed)	0.285	0.015	0.462	0.373	0.318	0.295
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		STACT1	TCHSTR2	SECUR2	ACADEM2	BEHAV2	STPEER2
BEHAGAIN	Pearson Correlation	-0.342	0.120	0.380	0.612	0.886	0.111
	Sig. (1-tailed)	0.018	0.237	0.009	0.000	0.000	0.253
	N	38	38	38	38	38	38
STPEGAIN	Pearson Correlation	0.110	0.332	0.253	0.650	0.258	0.924
	Sig. (1-tailed)	0.256	0.021	0.063	0.000	0.059	0.000
	N	38	38	38	38	38	38
MANAGAIN	Pearson Correlation	-0.337	0.082	-0.219	0.354	0.213	0.422
	Sig. (1-tailed)	0.019	0.313	0.093	0.015	0.099	0.004
	N	38	38	38	38	38	38
ADMGAIN	Pearson Correlation	-0.363	-0.209	0.134	-0.068	-0.061	-0.174
	Sig. (1-tailed)	0.012	0.104	0.212	0.342	0.357	0.148
	N	38	38	38	38	38	38
GUIDGAIN	Pearson Correlation	0.335	-0.263	-0.012	-0.264	-0.353	-0.040
	Sig. (1-tailed)	0.020	0.055	0.471	0.055	0.015	0.406
	N	38	38	38	38	38	38
PARCGAIN	Pearson Correlation	0.154	-0.213	-0.294	-0.153	-0.421	0.257
	Sig. (1-tailed)	0.179	0.100	0.037	0.179	0.004	0.059
	N	38	38	38	38	38	38
STACGAIN	Pearson Correlation	-0.571	-0.242	-0.185	0.347	0.225	0.364
	Sig. (1-tailed)	0.000	0.071	0.133	0.016	0.087	0.012
	N	38	38	38	38	38	38
CLIGAIN	Pearson Correlation	-0.531	-0.136	0.171	0.442	0.376	0.244
	Sig. (1-tailed)	0.000	0.208	0.153	0.003	0.010	0.070
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		MANAGE2	ADMSTR2	GUID2	PARENCO2	STACT2	TSTRGAIN
BEHAGAIN	Pearson Correlation	0.184	-0.052	-0.147	0.250	0.045	0.269
	Sig. (1-tailed)	0.135	0.378	0.190	0.065	0.394	0.051
	N	38	38	38	38	38	38
STPEGAIN	Pearson Correlation	0.472	0.009	0.061	0.380	0.602	0.286
	Sig. (1-tailed)	0.001	0.479	0.357	0.009	0.000	0.041
	N	38	38	38	38	38	38
MANAGAIN	Pearson Correlation	0.769	0.055	-0.175	0.294	0.396	0.162
	Sig. (1-tailed)	0.000	0.371	0.147	0.036	0.007	0.165
	N	38	38	38	38	38	38
ADMGAIN	Pearson Correlation	0.132	0.826	0.292	-0.285	-0.046	-0.078
	Sig. (1-tailed)	0.216	0.000	0.038	0.041	0.392	0.322
	N	38	38	38	38	38	38
GUIDGAIN	Pearson Correlation	-0.036	0.386	0.688	0.001	0.056	-0.335
	Sig. (1-tailed)	0.416	0.008	0.000	0.498	0.368	0.020
	N	38	38	38	38	38	38
PARCGAIN	Pearson Correlation	0.424	-0.128	0.166	0.779	0.526	-0.075
	Sig. (1-tailed)	0.004	0.221	0.160	0.000	0.000	0.327
	N	38	38	38	38	38	38
STACGAIN	Pearson Correlation	0.635	0.297	-0.104	0.368	0.639	0.039
	Sig. (1-tailed)	0.000	0.035	0.267	0.011	0.000	0.409
	N	38	38	38	38	38	38
CLIGAIN	Pearson Correlation	0.464	0.447	-0.052	0.064	0.341	0.041
	Sig. (1-tailed)	0.002	0.002	0.378	0.351	0.018	0.404
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

		SECGAIN	ACAGAIN	BEHAGAIN	STPEGAIN	MANAGAIN	ADMGAIN
BEHAGAIN	Pearson Correlation	0.338	0.490	1	0.206	0.233	-0.190
	Sig. (1-tailed)	0.019	0.001	.	0.107	0.079	0.126
	N	38	38	38	38	38	38
STPEGAIN	Pearson Correlation	-0.006	0.652	0.206	1	0.391	-0.081
	Sig. (1-tailed)	0.486	0.000	0.107	.	0.008	0.314
	N	38	38	38	38	38	38
MANAGAIN	Pearson Correlation	-0.366	0.361	0.233	0.391	1	-0.042
	Sig. (1-tailed)	0.012	0.013	0.079	0.008	.	0.400
	N	38	38	38	38	38	38
ADMGAIN	Pearson Correlation	0.054	-0.101	-0.190	-0.081	-0.042	1
	Sig. (1-tailed)	0.374	0.272	0.126	0.314	0.400	.
	N	38	38	38	38	38	38
GUIDGAIN	Pearson Correlation	-0.086	-0.318	-0.357	-0.160	-0.262	0.233
	Sig. (1-tailed)	0.304	0.026	0.014	0.169	0.056	0.079
	N	38	38	38	38	38	38
PARCGAIN	Pearson Correlation	-0.243	-0.069	-0.195	0.097	0.207	-0.247
	Sig. (1-tailed)	0.070	0.340	0.120	0.280	0.106	0.068
	N	38	38	38	38	38	38
STACGAIN	Pearson Correlation	-0.154	0.495	0.311	0.425	0.605	0.251
	Sig. (1-tailed)	0.178	0.001	0.029	0.004	0.000	0.064
	N	38	38	38	38	38	38
CLIGAIN	Pearson Correlation	-0.052	0.355	0.311	0.349	0.413	0.445
	Sig. (1-tailed)	0.379	0.014	0.029	0.016	0.005	0.003
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

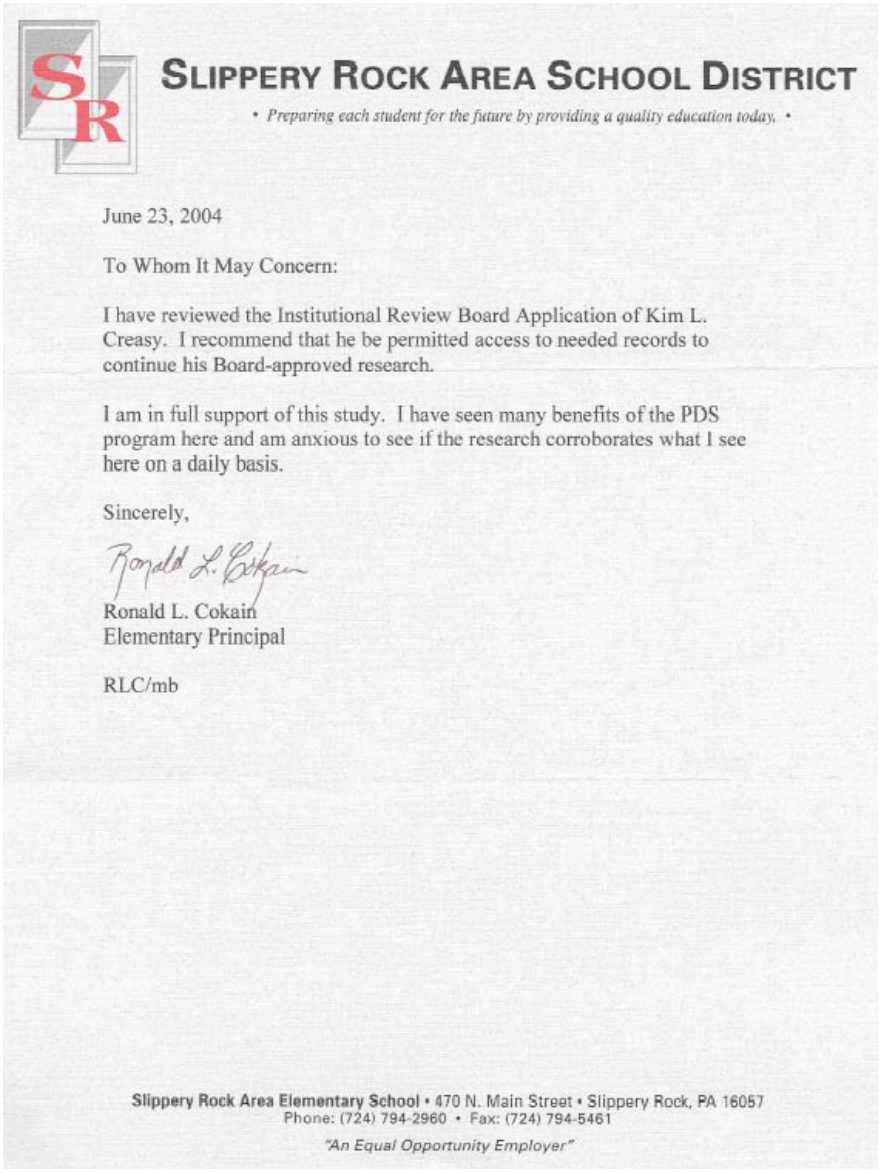
		GUIDGAIN	PARCGAIN	STACGAIN	CLIGAIN
BEHAGAIN	Pearson Correlation	-0.357	-0.195	0.311	0.311
	Sig. (1-tailed)	0.014	0.120	0.029	0.029
	N	38	38	38	38
STPEGAIN	Pearson Correlation	-0.160	0.097	0.425	0.349
	Sig. (1-tailed)	0.169	0.280	0.004	0.016
	N	38	38	38	38
MANAGAIN	Pearson Correlation	-0.262	0.207	0.605	0.413
	Sig. (1-tailed)	0.056	0.106	0.000	0.005
	N	38	38	38	38
ADMGAIN	Pearson Correlation	0.233	-0.247	0.251	0.445
	Sig. (1-tailed)	0.079	0.068	0.064	0.003
	N	38	38	38	38
GUIDGAIN	Pearson Correlation	1	0.177	-0.219	-0.106
	Sig. (1-tailed)	.	0.144	0.093	0.263
	N	38	38	38	38
PARCGAIN	Pearson Correlation	0.177	1	0.325	0.005
	Sig. (1-tailed)	0.144	.	0.023	0.487
	N	38	38	38	38
STACGAIN	Pearson Correlation	-0.219	0.325	1	0.714
	Sig. (1-tailed)	0.093	0.023	.	0.000
	N	38	38	38	38
CLIGAIN	Pearson Correlation	-0.106	0.005	0.714	1
	Sig. (1-tailed)	0.263	0.487	0.000	.
	N	38	38	38	38

**. Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

APPENDIX E

PERMISSION TO COLLECT DATA



SLIPPERY ROCK AREA SCHOOL DISTRICT

• *Preparing each student for the future by providing a quality education today.* •

June 23, 2004

To Whom It May Concern:

I have reviewed the Institutional Review Board Application of Kim L. Creasy. I recommend that he be permitted access to needed records to continue his Board-approved research.

I am in full support of this study. I have seen many benefits of the PDS program here and am anxious to see if the research corroborates what I see here on a daily basis.

Sincerely,

Ronald L. Cokain
Elementary Principal

RLC/mb

Slippery Rock Area Elementary School • 470 N. Main Street • Slippery Rock, PA 16057
Phone: (724) 794-2960 • Fax: (724) 794-5461

"An Equal Opportunity Employer"

APPENDIX F

HUMAN SUBJECTS APPROVAL

Office of Research Services and Sponsored Programs
Akron, OH 44325-2102
(330) 972-7888 Office
(330) 972-6281 Fax

June 25, 2004

Kim Creasy
3407 Wilmington Road
New Castle, PA 16105

Mr. Creasy:

The University of Akron's Institutional Review Board for the Protection of Human Subjects (IRB) completed a review of the protocol entitled "*The Effect of a Professional Development School Classroom Setting on Student Achievement as Measured by the Iowa Tests of Basic Skills: A Quasi-Experimental Design*" The IRB application number assigned to this project is **20040602.**

The protocol qualified for exemption from continuing IRB review on March 30, 2004. The protocol represented minimal risk to subjects. Additionally, the protocol matched the following federal category for exemption:

> *Research conducted in established or commonly accepted educational settings, involving normal educational practices*

If you propose changes to this protocol, an Application for Continuing Review Form must be completed and submitted to the Office of Research Services.

Please retain this letter for your files. If the research is being conducted for a master's thesis or doctoral dissertation, the student must file a copy of this letter with the thesis or dissertation.

Sincerely,

Sharon McWhorter, Associate Director

Cc: Walter Yoder, Dean
Carol Newman, Advisor
Phil Allen, IRB Chair