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**Relationships And Differences On Self-regulated Learning,
Parental Involvement, Homework, and Academic Achievement,
Among High School Students In Rural West Virginia**

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Dissertation submitted to the
College of Human Resources and Education
at West Virginia University
in partial fulfillment of the requirements
for the degree of

Doctor of Education
In
Educational Psychology

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Abstract

Relationships And Differences On Self-regulated Learning, Parental Involvement, Homework, and Academic Achievement, Among High School Students In Rural West Virginia

Samuel R. Heastie

The purpose of this study was to examine the relationships among self-regulated learning (SRL), parental involvement (PI), homework (HW), and cumulative grade point average (CGPA), and the differences between gender on these variables for high school students in rural West Virginia. Research was conducted at a rural high school, grades nine through 12, in North Central West Virginia. Participants in the study comprised of 50 students and 35 parents, for a combined total of 85 participants. Data were collected for students and parents from teachers' grade book, students' records, and two survey instruments – Bandura's Children's Self-Efficacy Scale (1990) and The Parent Involvement Scale, constructed by the investigator specifically for this study. The present study tested 10 hypotheses. The first six hypotheses investigated the relationship among SRL, PI, HW, and CGPA. The next four hypotheses (seven through 10) examined the differences between gender on the same four variables. Spearman Rho (r_s) was used to test hypotheses one through six for relationships. A Mann Whitney U was used to examine hypotheses seven through 10 for differences. The present study found statistically significant positive relationships between SRL and CGPA, between HW and CGPA, and between SRL and HW; and statistically significant differences between gender on SRL, and between gender on HW. The study also found that there were no statistically significant relationships between PI and CGPA, between PI and SRL, and between PI and HW. There were also no statistically significant differences between gender on PI, and between gender on CGPA. The results of this study found no statistically significant relationships or differences between PI and any of the other variables investigated. These findings are discussed.

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CHAPTER ONE

Introduction

An argument can be made that the three most vital components of any K through 12 educational system are students, their parents, and learning institutions. First, students are vital because they are the objects of education. In other words, students are primarily the ones for whom curricula are designed, textbooks are written, and laws are legislated. It is students who are asked to consume learning, show evidence of it, and make the most of it. Second, parents are the ones held responsible for preparing students for learning – preparation physically, psychologically, behaviorally, attitudinally, emotionally, and motivationally, just to name a few. And third, learning institutions are vital because they provide the infrastructure in students to learn, and they provide the guidance and support parents want and need in preparing students for learning.

Over the years, numerous theories and associated constructs have been formulated and have evolved to describe and explain these three independent, but often interdependent, entities of an educational system. For example, the behavioral learning theories of Thorndike, Watson, Skinner and, Hull, the cognitive learning theories of Piaget, Kohlberg, and Vygotsky, and the social learning theories of Bandura, have been used to pose and answer questions about students, parents, and schools. The behavioral camp of Thorndike, Watson, Skinner, and Hull formulated theories based on the measurable outcomes of behavior. Behaviorism contends that intelligence and learning can be measured by tests and examinations – indicators of what one is able to do as a result of instruction (Skinner, 1984). Cognitive theorists like Piaget, Kohlberg, and Vygotsky believed that measurable behaviors are but one aspect of human

existence and, proportionately, one dimension of learning. They assert learning includes thinking processes which are facilitated by discovery and affective meaning based on developmental potential (Bruner, 1984). That is, learners are not mere respondents to stimuli but are capable of processing information in meaningful ways that lend and lead to the discovery of new knowledge (Zimmerman, 1986). Bandura's social learning theory extends the cognitive view. He describes learning as a process of reciprocal determinism – a continuous interaction between behavior, thinking and environment where the learner proactively exercises control and regulates self (Bandura, 1986).

The theories of these aforementioned patriarchs of learning are important, because they have provided modern education with tools for theoretical evolution and advancement. For example, Skinner's theory of operant conditioning that uses rewards is widely used, today, by teachers in the form of giving a student stars, or some such, for desired academic performance. Similarly, the imprints of Vygotsky's zone of proximal development are seen, today, in peer tutoring where more capable students assist their less capable peers with thinking through challenging educational material.

The theories of these forefathers are important to this immediate study because they were the foundations for self-regulated learning (SRL), parental involvement (PI), and homework (HW) – the three constructs of interest in the present investigation. Self-regulated learning has its roots in Bandura's social learning theory, PI is rooted in Vygotsky's zone of proximal development, and HW is founded in the practices of behaviorism. These three constructs are further discussed.

The first of these, SRL, views students as proactive manipulators of a learning task in the learning environment (Zimmerman, 1986). They exercise control in the learning process – plan, monitor, and evaluate learning, hold beliefs that they are capable learners, and select, structure, and create their learning environments so that it assist with attaining goals they have set. Thus, students are said to be metacognitively, behaviorally, and motivationally involved in their learning (Corno, 1986). Many studies have examined this construct of SRL. Paterson (1996) compared high school students' achievement under conditions of self-regulation and traditional instruction. Results showed academic achievement to be greater for self-regulated instruction. He also found that students were quite capable of monitoring their performance, elaborating existing knowledge, and managing their time so that they met the self-set goals of a learning task. Self-regulated learning is one of the variables examined in the present study.

A second construct associated with the educational system, that has received a lot of research attention, is PI. Three of the prominent areas that have been studied in reference to parents are communication, influence, and parenting style. Sexton (1990), conducted a study with 10th grade math, science, and English students, designed to improve the academic performance of failing students by improving the amount of communication between the students' parents and teachers. By design, teachers kept a written record of each time they attempted to contact parents about a student-related issue. After 12 weeks, at the end of the study, Sexton found significant improvements in students' performance. He recommended that the program be widely practiced as one way of improving parent participation. Another study, Steinberg, Brown, and

Dornbusch (1996), found empirical evidence of what most parents and educators know from experience – that parents have a strong influence on high school students. Steinberg and his colleagues conducted surveys, focus groups, and individual interviews with high school students and parents to better understand how parents, peers and communities influence students' commitment to school. The 10-year longitudinal study collected data from 20,000 students and 500 parents in nine ethnically diverse school and communities. These researchers found that parents' behaviors send clear and decisive messages about their thoughts and feelings on the importance of schooling. They also found that parenting style helps or hinders a child's engagement in school; that encouraging a child to do well in school or insisting that HW be completed were important forms of promoting engagement. These three tenets – communication, influence, and parenting style – are subsets of a larger domain, PI. The aforementioned studies are not the only ones that speak to the issue of PI, but, here, serve only as a way of introducing the broader sphere. Parental involvement was the second variable that the present study examined. In this specific investigation PI was studied in reference to HW – a subset of the larger domain, as are communication, influence, and parenting style.

The third construct associated with the educational system is HW. Again, thousands of studies have been conducted that examine various elements of schools. A study by Wells (1987) found that students tend to achieve their goals when teachers and principals have high expectations, when teachers are thoroughly knowledgeable in their subject content area, when principals clearly communicate that learning is the focus of the school, and when administrators collaborate with teachers in decision-

making processes. Hill, Holmes-Smith, and Rowe (1993) conducted a similar study on effectiveness. Based on a 3-year longitudinal study of more than 14,000 participants, they unearthed several significant findings. They found that (1) school profiles provide an effective framework for monitoring and reporting achievement, (2) schools are not limited in what they can do in addressing students' inequalities associated with SES, (3) early childhood education affects later achievement, and (4) the emphasis placed on HW, the amount of HW assigned, and the monitoring of HW, varies with schools, parents, and students. This latter issue of HW was of special interest to the current study and was the third variable investigated.

The previous discussion cites studies that have examined these three constructs individually. They, however, have been examined collectively, as well. That is, researchers have studied various combinations of these constructs. For example, Williams (1996) conducted research on SRL and academic achievement. In her study, 75 eleventh and twelfth-graders in 12 rural high schools completed the Iowa Achievement Test and Bandura's (1990) Self-Regulated Learning subscale, which measured perceived self-efficacy in using 11 SRL strategies. Multiple regression was used to examine the relative influence of the self-regulatory strategies on achievement in mathematics, science, social studies, and reading. Results indicated that an increased SRL was associated with higher student achievement in all four subject areas investigated. Bacon, Chovelak, & Wanic, (1998) examined PI and HW. Bacon et al. hypothesized that problems in students completing HW may be effected by lack of PI and support. To test their hypothesis, 111 sixth graders in middle school or elementary schools and 22 first year Spanish high school students participated in a study designed

to (1) increase communication with parents regarding HW policies and parent involvement with HW; (2) incorporate cooperative learning activities such as HW support base groups; and (3) evaluate and design HW assignments to better meet student individual needs, learning styles, and curricular objectives. Results indicated that HW completion increased in the elementary and middle schools but showed no significant improvement at the high school level. Cooperative learning with metacognitive processing and modification of HW assignments were effective in improving the quantity and quality of HW completion. However, there was no evidence that increased communication with parents increased PI nor influenced HW completion.

To date, nearly 200 studies have been conducted on SRL, about 3000 studies conducted on HW, and over 6000 studies conducted on PI. Of possible combinations among these variables, three studies have looked at SRL and HW, and 179 studies have looked at HW and PI. No investigations have examined SRL and PI, and no single study has examined all three variables collectively. Given that these constructs appear to serve vital roles in an educational system, and given that the research in these three areas, singularly, has been voluminous, it seems logical that some question would be asked about the relatedness.

Statement of the Problem and Purpose

While there is an abundance of research conducted, singularly, on SRL, PI, and HW, in relation to academic achievement, and although there have been many studies that looked at combinations of two of these variables, there is currently no study that has examined all three collectively. Accordingly, a need exists for research to do just that in order to continuously expand our knowledge of these constructs. The purpose,

then, of the current study was to extend the body of knowledge in educational psychology and narrow the existing gap in the literature by asking the question, “What relationships are there among self-regulated learning, PI, HW, in relation to academic achievement, and what differences are there between gender on these variables for high school students in rural West Virginia?”

Research Hypotheses

H_{A1}: There is a relationship between SRL and CGPA.

H_{A2}: There is a relationship between PI and CGPA.

H_{A3}: There is a relationship between HW and CGPA.

H_{A4}: There is a relationship between SRL and PI.

H_{A5}: There is a relationship between SRL and HW.

H_{A6}: There is a relationship between PI and HW.

H_{A7}: There is a difference between gender on SRL.

H_{A8}: There is a difference between gender on PI.

H_{A9}: There is a difference between gender on HW.

H_{A10}: There is a difference between gender on CGPA.

Null Hypotheses

H_{O1}: There is no statistically significant relationship between SRL and CGPA.

H_{O2}: There is no statistically significant relationship between PI and CGPA.

H_{O3}: There is no statistically significant relationship between HW and CGPA.

H_{O4}: There is no statistically significant relationship between SRL and PI.

H_{O5}: There is no statistically significant relationship between SRL and HW.

H_{O6}: There is no statistically significant relationship between PI and HW.

H₀₇: There is no statistically significant difference between gender on SRL.

H₀₈: There is no statistically significant difference between gender on PI.

H₀₉: There is no statistically significant difference between gender on HW.

H₀₁₀: There is no statistically significant difference between gender on CGPA.

Significance of the Study

This study is significant because:

1. It has increased the general fund of knowledge in educational psychology by, at least, narrowing the gap in the existing literature on the relationship among SRL, PI, and HW; and the difference between gender on these variables.
2. It has offered empirical evidence to schools, parents, and students about the nature of these relationships and differences.
3. It has used a measure of PI that has aided in isolating the effects of PI as suggested by previous research.
4. It offers a reference for future research that might investigate the same variables.

Overview of Methodology

Research was conducted at a High School, grades nine through 12, in rural North Central West Virginia. The sample of the study was made up of eighty-five persons – fifty high school students, and thirty-five parents. Because the researcher was interested in the relationship among variables, differences between gender, and because the data being analyzed were nominal and ordinal, the non-parametric Spearman Rho and the Mann Whitney U analyses were used. Data was collected

through the use of two research instruments, teachers' grade book, and students' record. One of the instruments, Bandura's Children's Self-Efficacy Scale (1990) was used to collect student data on SRL. Additional data for students was collected from teachers' grade book and students' record. Data from teachers' grade book was comprised of HW grades. Data from students' records comprised of cumulative grade point average (CGPA).

Parent data were collected with the Parent Involvement Scale (PIS). The PIS was created by the researcher specifically for this investigation. The 16-item instrument was designed based on the operational definition of PI for the present study. The scale was constructed with two major sections. The first, comprising of six items, solicited information about the person who completed the form. The second major division comprised of 10 items – a five-point Likert-type scale – gathered information about the respondent's involvement with the student.

Operational Definitions of Primary Variables

1. Self-regulated learning (SRL) – the proactive monitoring and control of goals, promoted through metacognition, behavior, and motivation, by an individual who is aware of the academic tasks in a learning environment.
2. Parental Involvement (PI) – any form of verbal or non-verbal communication or assistance in reference to a child's homework.
3. Homework (HW) – regularly assigned classwork that is completed during non-school hours, required to be completed and returned, checked by the teacher upon return, graded, and recorded as complete or incomplete.

4. Cumulative Grade point average (CGPA) – the cumulative grade point average during high school.
5. Learning institution (LI) – a place associated with all aspects of a school (e.g. administration, faculty and staff, curriculum, building, etc.)

CHAPTER TWO

Review of the Literature

The objective of this chapter is to review literature that is relevant to the present study. Accordingly, it will review and cite literature that formed the basis of the investigation. The discussion focuses on the self-regulated learning (SRL), parental involvement (PI), and homework (HW) as constructs. First, the chapter reviews studies that have examined them individually, then it reviews studies that have examined them in dyads. The chapter concludes with a discussion of relevant literature on gender differences.

Self-regulated Learning

Student academic achievement is generally the focus of scholastic learning. Literally thousands of studies have been conducted on issues related to the phenomenon. One body of literature that has become prominent with cognitive views of learning is self-regulated learning (SRL). Whereas in the early beginnings of education, the focus was students as recipients of knowledge via a lecturer, in the new beginnings the focus shifted to a view of students as proactive manipulators of a learning task in the learning environment (Zimmerman, 1986a). Self-regulated learning theorist view students as individuals who exercise control in the learning process. Today, students plan, monitor, and evaluate their learning, hold beliefs that they are capable learners, and select, structure, and create their learning environments so that surroundings assist with attaining goals they have set. Accordingly, students are said to be metacognitively, behaviorally, and motivationally involved in their learning (Corno, 1986).

Pintrich and De Groot (1990), found support for SRL in reference to academic achievement. In a study that investigated motivational and self-regulated components of classroom academic performance, 173 seventh graders from Science and English classes completed the Motivated Strategies for Learning Questionnaire (MSLQ) – a self-report measure which included student self-efficacy, self-regulation, and use of learning strategies. These researchers conducted correlational analyses to examine the relationship among motivational orientation, SRL, and classroom academic performance. Motivational orientation was described as having three component parts. The first was, expectancy – a student’s belief about their ability to perform a task. A student-associated question with this component is “Can I do this task?” The second motivational orientation described was value – a student’s goals for the task and their beliefs about the importance and interest of the task. A student-associated question, related to this value, is, “Why am I doing this task?” The last orientation described was affect – a student’s emotional reaction to the task. A student-associated question with this orientation is, “How do I feel about this task?” The investigators asked three questions. (1) How are the three motivational components related to the components of SRL? (2) What are the interactions among the three motivational components and their relation to the SRL components? And, (3) how are the motivational and SRL components related to students’ performance on classroom academic tasks? Researchers found support for relations among motivational orientation, SRL, and classroom performance. They discovered that (1) students who believed that they could accomplish a task, were more likely to report the use of cognitive strategies and, to be more self-regulating in terms of reporting more use of metacognitive strategies,

and to persist more often at difficult or interesting academic tasks. Second, they found that students who were intrinsically motivated to learn the material and believed that their school work was interesting and important, were more cognitively engaged in trying to learn and comprehend the material. And finally, intrinsically motivated and self-regulated learners were more likely to report that they stayed with their academic task. Pintrich and De Groot (1990) concluded that students who want to perform well, and have the knowledge of what it takes to perform well, do. They said, “students need to have both the “will” and the “skill” to be successful in classrooms (p.38).

Zimmerman (1989) offers a social cognitive view of the SRL construct. According to this view, SRL is comprised of three determinants, the personal, the behavioral, and the environmental. Zimmerman also contends that SRL has three component parts, the self, the control, and the goal, which operate metacognitively, behaviorally, and motivationally, respectively. Additionally, there are numerous learning strategies. All of these processes operate interdependently and reciprocally to produce an outcome – autonomous learning. Here, perhaps the most critical aspect of SRL is the personal determinant, self – the learner. Without self in the equation, it is merely regulated learning – something owned, operated, and managed by an entity other than the learner. Self as the agent of learning means that the responsibility, goals, and objectives of learning shift from outside of the individual to within the individual learner. The process of shifting from without to within occurs metacognitively, behaviorally, and motivationally, through self-monitoring, self-control, being goal-oriented, and using learning strategies. In other words, a learner is self-regulated when she is aware (metacognition) that she is not accomplishing what she hoped to achieve (motivation),

and therefore takes action (behavior) to help ensure her attainments. For example, if as a HW assignment, a student is instructed to read a textbook chapter on digestion and she does so, although she has completed the assignment she has not engaged in SRL. If, however, while reading the assigned chapter she becomes aware (self-monitoring) that she is unclear about some aspects of the process of digestion and makes a note (self-control) of questions that she will ask her teacher at the next class session (use of learning strategy), because she wants to fully understand the digestive process (goal-oriented), she is engaging in SRL. The student consciously recognizes that she does not understand the material as well as she would like, and she, herself, takes measures to facilitate understanding. Although self – as the personal determinant – is the beginning point and a critical aspect of the SRL equation, there are other parts – behavioral determinant and environmental determinant. Behavioral self-regulation is a student's proactive use of self-evaluative strategies to provide information about a learning task. That is, a student is engaging in self-regulation, behaviorally, if she is using self-observation, self-judgment, and or self-reaction to assess what is happening with a learning task. Self-observation is one's systematic monitoring of their own behavior. Self-judgment is one's systematic comparison of their own performance in reference to a standard or goal. And self-reaction is what one does in response to the information they received when they compared their performance to a standard or goal. These three processes of self-evaluation operate interdependently and reciprocally. For instance, as in the previous illustration, the student self-regulates behaviorally if she checks her understanding of what she has read through the use of questions at the end of the chapter (self-observation). If she discovers – through her inability to answer the

chapter questions – that she does not understand what she has read as much as she thought she did or as much as she would like to understand it (self-judgment), she might reread the chapter or, she might ask a parent for assistance or, she might highlight the questions that were asked in the text and discuss them with her teacher during the next class session (self-reaction). But none of these processes occur independently of environmental determinants. Environmental self-regulation is one's proactive manipulation of learning strategies to attain their own goal. Environmental, here, means person, place, or thing. Therefore, as the learner observes, judges, and reacts to a learning task, she will concurrently and systematically use the most effective methods to reach her goal. For example, as with the student who was assigned the chapter on digestion, if having read the chapter she discovers that she does not understand as much as she would like to, she will explore her environment for assistance for a fuller understanding of what she read. Some explorative strategies might be a person – a parent or her teacher; a place – moving to another room in the house where she can better concentrate; or a thing – highlighting key concepts as she rereads the chapter. These are only a few of the strategies a learner might use to reach their goal.

Zimmerman (1986b) has identified other learning strategies. Some of them are (1) organizing and transforming – the learner's rearrangement of instructional material to improve meaning and understanding; (2) goal setting and planning – the learner's willingness to set goals or subgoals and plan for follow-up activities related to those goals; (3) keeping records and monitoring – the learner's efforts to record events and their subsequent results; (4) environmental structuring – the learner's efforts to arrange the physical setting so that it lends to efficient and effective learning; (5) self-

consequating – the learner’s self-imposed rewards or punishments for success or failure; (6) rehearsing and memorizing – the learner’s attempts to remember material by internal or external mechanisms; (7) seeking social assistance – the learner’s efforts to solicit help from others; and (8) reviewing records – the learners efforts to reread notes, tests, or textbooks in preparation for class or a test. Therefore, to the degree that a learner is self-monitoring, using learning strategies, self-observing, self-judging (self-evaluating), and self-reacting that fully incorporates personal, behavioral and environmental influences in a learning situation to achieve a learning goal, he or she is a self-regulated learner or, perhaps more accurately, engaging in SRL. For the purposes of the immediate investigation, SRL is defined as the proactive monitoring and control of goals, promoted through metacognition, behavior, and motivation, by an individual who is aware of the academic tasks in a learning environment (Bandura, 1986; Pintrich, 1995; Schunk, 1994; Zimmerman and Martinez-Pons, 1990). Teachers in school may teach SRL, but parents, too, can assist at home.

Parental Involvement

Baker and Soden (1997) in a meta-analytical review of over two hundred articles on parental involvement (PI) describe what they refer to as significant gaps in research, programs, and practice. They identify four things they believe contribute to the equivocality and lack of consensus in PI, namely – use of non-experimental designs, failure to isolate for the effects of PI, no universal definition, and use of non-objectives measures. These authors argue, first, that there is a lack of consensus among researchers because of the use of non-experimental designs. They said that of the 108 studies they reviewed, only three employed true experimental designs. The other 105

studies used pre-experimental designs, quasi-experimental designs, and correlational designs. Baker and Soden saw this as problematic because among these studies there were either no comparison group or, if there were, they were not randomly assigned, nor assessed at pretest; studies failed to control for internal validity and, because of the nature of the designs findings had to be treated as suggestive rather than conclusive. These reviewers appropriately acknowledged, however, that conducting experimental field research is extremely challenging, time consuming, and expensive. And, although methods other than true experimental have their limitations, they can yield some useful information to continuous development of a meaningful construct.

Second, Baker and Soden (1997) argue that there is a lack of consensus among researchers because of failure to isolate for the effects of PI. That is, they found that many investigations compared children who were receiving PI interventions with children who were not receiving intervention, where improvement was attributed to PI. The problem here, they say, is that improvement maybe due to someone other than the parent in the relationship. Baker and Soden add that a similar problem presents itself when improvement occurs but there is no control for other effects, independent of PI, such as educational curriculum and physical and social contexts of the study. For example, if a school commissions a weekly communal reading program at the school site where parents are encouraged to bring their child one night out of the week to participate in a read-along program, and if at the end of the school year administrators attribute success of the program to PI, how would they be certain? "Success" may be due to nighttime, communal reading, school site, or something else. On this note, Baker and Soden recommend that researchers specifically measure type and level of PI

separately from other components of interventions in order to assess its independent impact on the identified outcomes.

Third, Baker and Soden argue that there is a lack of consensus among researchers because of no universal definition. Definitions apparently were constructed, they argue, based on the aspect of PI that was being investigated. For instance, Soto (1988) defined the construct as parental aspirations; Crystal, Chen, Fuligni, and Stevenson (1994) defined PI as expectations for the child's educational success; Eagle (1989) defined it as assistance with HW, and Lareau (1987) offered a definition that reflected parental attendance at parent-teacher conferences. Baker and Soden further stated that even when the same aspects of PI were being examined, home environment for instance, researchers operationalized them differently. In order to eliminate or at least limit ambiguity about what PI is, Baker and Soden recommend that future researchers make explicit which aspect of PI is being measured and how it fits into the broader construct in order to advance current knowledge and foster a consistent understanding.

Fourth, Baker and Soden (1997) argue that there is a lack of consensus among researchers because of the use of non-objective measures. They said that a few studies they reviewed used observational techniques in their study, but by far the majority of the studies reviewed used self-report measures to collect data. The reviewers argue that by using self report measures, bias potentially enters because of a social desirability confound which often exists when parent, students or teachers report on PI. They suggest that the best way to address this problem is to use objective measures such as direct observation and standardized data collection tools. Baker and

Soden concluded that while there is ambiguity, inconsistency, and a lack of consensus about what PI is and how it can and should be studied, it is imperative that researchers continue to build upon and expand this vital and demanding area of study. They also encourage investigators to examine the ways in which types of PI positively effect student achievement in different context. One of the ways schools ask parents to be involved in children's education is through homework (HW) – the third variable of interest in this study.

Homework

Like parental involvement (PI) there is an abundance of literature on homework (HW). However, there are wide disparities among writers and investigators in what is said about the phenomenon; much of which may be due, in part to no commonly accepted definition and a small body of empirical evidence (Palardy, 1988). Many schools have no formal policy on HW, but it is often a large part of the school's educational program. There are four major purposes for assigning HW. First, HW teaches students self-discipline, independence, and responsibility (Featherstone, 1985). Second, HW increases students' academic achievement. This is perhaps one of the most controversial issues in the HW debate. For as many researchers who find that HW increases academic achievement, there are others who find the direct opposite. Third, HW fulfills the expectations of students, parents and the public – this group of people expect it (Pendergrass, 1985). And fourth, HW facilitates schools' curricula by expanding the school day. Associated with these purposes are the functions of HW – what it is intended to do. There is general agreement that HW has three functions, practice, extension, and preparation.

Homework that is assigned for practice intends to provide students the opportunity to reinforce their acquisition of new skills by doing more of what was recently taught – solving math problems, for instance (Epstein, 1983). Second, HW is often assigned as extension (Murphy, 1990). The idea here is the assignment will enable students to extend existing knowledge by creating or producing something. For example, if as a HW assignment, a fourth grade teacher asks his students to use their knowledge of basic colors to paint a picture, he is helping them to go beyond the “what” of education to the “how” of education. The last function of HW is preparation. Preparation HW asks a student to “get ready” for the next step, unit, phase, or section (Foyle, 1985). This form of HW encourages a student to read ahead in a textbook, conduct research in a library, or formulate questions to ask during the next class session, for instance. In addition to the purposes and functions of HW, there are problems with the construct.

One problem with HW is that most schools do not have a policy (Palardy, 1988). Consequently, students might be given too much, too little, or none at all. This lack of structure can have varying effects, ranging from so little that it serves no function to so much that it interferes with other aspects of a student’s life. Another problem with HW is it can foster undesirable student behavior (Sullivan and Sequeira, 1996). For instance, if students are given HW simply to keep them busy and they find no meaning or relevance in it, they might tend to disengage from HW in particular and school in general.

In an article entitled Synthesis of Homework, Cooper (1989) discusses the cyclical nature of HW – what it is, and its positive and negative effects – as reported in

studies between the 1940's and the late 1980's. First, with respect to the cyclical nature of HW, he attributes this merry-go-round effect to public attitude depending on the tenor of the times. That is, based on what was happening at the time, people generally favored or disfavored HW. Cooper refers to two significant times when attitudes changed from little to heavy emphasis on HW. The first was in the 1950's when the Russians launched Sputnik and Americans worried that education lacked rigor, leaving children unprepared for complex technologies. And second, in the early eighties, inspired by, A Nation At Risk: The Imperative for Educational Reform, a report by the National Commission on Excellence in Education (Pritchard and Smarr, 1983). Next, Cooper defined HW – “tasks assigned to students by school teachers that are meant to be carried out during non-school hours.” His definition accounts for teacher-assigned work in one class, that a student might complete during another class because he or she chose to do it at that time rather than being attentive in the latter class. The definition, however, does not include in-school guided studies such as class time allotted for practicing new skills. It also excludes home study courses, such as ways to improve math aptitude, and extracurricular activities such as a science project. Third, Cooper delineates the positive and negative effects of HW. He identifies immediate achievement and learning, long-term academic effects, non-academic effects, and greater parental appreciation of and involvement in schooling, as positive effects. Further, he identifies satiation, denial of access to leisure-time and community activities, parental interference, cheating, and increased differences among existing social inequities between the “haves” and the “haves-not.” Cooper reports that better retention of factual knowledge, increased understanding, concept formation, problem solving, and

information processing, independence, forging positive attitude, and the development of effective and productive study skills and habits are all facilitated and realized via HW. He also notes that loss of interest in academia, physical and emotional fatigue, reduced opportunities to engage in community and non-academic activities, the chance of parental assistance becoming parental deterrence because of parental pressures to perform well and confusion of instructional techniques, cheating in the form of copying from others, and the increased differences between high and low achievers that may be brought on or exacerbated by social inequities, are all negative components of HW. Cooper argues that HW, perhaps, of all instructional devices is the most interesting and perplexing because it is the one aspect of education that encompasses the physical, emotional, psychological and social conditions and complexities of education. Cooper concluded his article by saying that based on the evidence, HW has a place in education, but additional research is required to better understand the interrelatedness of variables within this construct.

So far, the review of literature has focused on studies that have looked at SRL, PI and HW independently. Focus now shifts to studies that have examined these variables as dyads.

Studies with Variables Combined

Corno (1994) found implicit support for a relationship between self-regulated learning (SRL) and homework (HW). The study hypothesized that the students would come to know what SRL is, and enjoy it, based on the importance and repetition of activities associated with it in the presence of significant others. Corno used HW as the activity to test her hypothesis and found that HW sessions were catalysts for parent-

child dialogue around issues of autonomy and conformity – components of self-regulatory behavior. This impact of parental involvement (PI) is demonstrated quite pointedly in a study to improve time management for working students. Anderson, Lott, and Wieczorek (1998) implemented and evaluated a program for increasing time spent on HW with five employed high school students taking geometry and physical science who were also employed more than 15 hours per week. The research intervention called for completion of a self-awareness worksheet for incomplete assignments, implementation of a time management plan, and a series of interviews with students and their parents. Researchers found that the intervention increased the frequency of HW completion by increasing self-awareness, increasing student responsibility, and increasing teacher and PI. Further evidence on PI is seen in its association with cumulative grade point average (CGPA).

Keith, Keith, Quirk, Sperduto, Santillo, and Killings (1998) analyzed data on over 15,000 students from the base year (1988) and the first follow-up year (1990) surveys of the National Educational Longitudinal Study (NELS). The study was designed to examine the longitudinal effects of PI on tenth-grade students' learning and whether the same pattern of influences exists for boys and girls and for students from different ethnic groups. Latent variable structural equation modeling (SEM) was used to study the influence of PI on tenth grade point average. Results suggested that PI has an effect on students' CGPA and that the same influences hold across gender but were different across ethnic groups.

The preceding examples serve to illustrate that there is empirical evidence of studies that have been conducted. To the extent that Corno (1994) found a relationship

between SRL and HW, that Anderson et al. (1998) found that increased PI positively effects frequency of HW completion, and that Keith et al. (1998) found PI to have a positive effect on CGPA, these studies serve as a basis of empirical evidence of what has been studied and how it might be used to conduct similar research that extends knowledge by examining all three variables collectively, as intended by the present study. Because the present study included hypotheses of gender differences, attention now turns to a general review of literature on the subject.

Gender Differences

Perhaps one of the largest studies conducted on gender differences is Cole's (1997) Educational Testing Service (ETS) Gender Study. Her study analyzed data from more than 400 tests and other measures from more than 1,500 data sets involving millions of students. The study focused on nationally representative samples that incorporated numerous grade levels, academic subjects, and physical school years. For nationally representative samples of 12th graders, results indicated that gender differences are quite small for most subjects, small to medium for a few subjects, and quite even for females and males. She found no dominant picture of one gender excelling academically, and moreover, found the average performance difference across all subjects to be virtually zero. Cole found a language advantage for females and a very small advantage for males in math and science. The study showed an association between patterns of gender differences in performance and patterns of differences in interests and out-of-school activities.

A similar study conducted by DeMars (1997) using data from the Michigan High School Proficiency Test (HSPT), looked for differences between gender on math and

science. The investigator used two of the pilot forms of the mathematics and science sections of the HSPT to examine gender by content scale interactions. She found no differences between gender, except among students above the 95th percentile on the mathematics test.

Cole (1997) and DeMars (1997) results are quite different from Wang and Staver's (1997). These latter researchers conducted their research in five provinces of China with more than 12,000 ninth graders. They found statistically significant difference between gender on science achievement, in favor of males. They concluded that the findings were a continuous reflection of an unchanged culture that emphasized male education over female education, especially in rural regions of China.

Gender differences, SRL, HW, PI, and CGPA are constructs that have made their mark in the research literature. Each phenomenon has been studied extensively, independently. Among them nearly 10,000 studies have been conducted. There are also instances where they have been examined in association with each other. For example, HW sessions were found to be catalysts for parent-child dialogue around issues of autonomy and conformity – components of self-regulatory behavior; and PI was found to have an effect on students' CGPA. However, despite the extensive work that has been done independently, and collectively in dyads, to date there is no empirical evidence all of them having been examined in one study. Thus, the present study looks at them together.

The constructs of SRL, PI, and HW appear to have clearly established themselves in the literature. Of the three, SRL is the least studied, but research evidence on the phenomenon strongly demonstrates that students are capable of

autonomous learning when they know how to manipulate their learning environments metacognitively, motivationally, and behaviorally. Parental involvement (PI) as a research area has come under fire, in the literature, for its weaknesses in methods, failure to isolate for its effects, no universal definition, and its frequent use of non-objective measures. Despite these weaknesses, meaningful contributions on PI have been made to the field. Similarly, HW has been criticized for its definition being like a moving target, hence there are disparities among writer about what HW is. However, there is general agreement on the purpose and function of HW. In addition to these variables having been examined singularly, they have been studied as dyads. Homework has been demonstrated to be a catalyst for developing self-regulatory behavior, and PI has shown impact on HW. Research on gender has shown that differences are generally very small, except in some case where culture disproportionately places emphasis on males.

In sum, this chapter attempted to provide the reader with a review of literature as related to the current study. To that end, this review has looked at SRL, HW, PI, and gender difference in reference to academic achievement. The similarities between the studies cited and this one is in the use of correlational designs, definition of SRL, and the use of CGPA as an indicator of academic achievement. Obviously, there is no research exactly like the present investigation. Therein lies the differences between the studies cited and the present study. Particularly, the current investigation defined PI as any form of verbal or non-verbal communication or assistance in reference to a child's homework. This definition is different than definitions used in other studies. Other than this study, currently there is no instrument that exclusively uses homework to measure

PI. Although Eagle's (1989) study of PI defined it as assistance with homework, her broader definition included other variables that are not a part of the current investigation.

This chapter also served as an opportunity for the present researcher to draw on preceding scholarly efforts that would help develop the theoretical and methodological framework for the present study. Accordingly, this study intends to collect survey data from parents and their students who attend a high school in rural West Virginia. Full details of the study are covered in the next chapter.

CHAPTER THREE

Methodology: Research Design

Research Purpose and Perspective

The focal point of this study was to examine the relationships among self-regulated learning (SRL), parental involvement (PI), and homework (HW), in reference to academic achievement, and investigate the differences between gender on these three variables in reference to academic achievement defined as students' cumulative grade point average (CGPA). The objective of this study was to quantitatively examine the relationships among and differences between the aforementioned variables in an effort to address a void in the current research literature. Accordingly, the research used a numerical approach to collect and analyze data. In examining the relationships among variables, correlational statistics were employed. Because more than one assumption for running parametric tests was violated, a Spearman's Rho was used to investigate the strength of relationships in hypotheses one through six, and a Mann Whitney U was used to test for statistical differences in hypotheses seven through 10.

Context for the Study

Research was conducted at a rural high school, grades nine through 12, in North Central West Virginia. The school is the only public high school in its county. The school numbers 725 students in grades nine through twelve, ranging in age from 14-21. The student body has an almost 50/50 make-up – 369 males and 356 females. The vast majority of students were Caucasian with less than one half of one percent of the students belonging to an ethnic minority group. The School has three administrators and forty-seven teachers. The school follows a letter grade system on a 0.0 to 4.0 grade

point average scale. Permission to conduct research was granted through the school's administrative office. The school's vice principal was directly responsible for the oversight of the research (see Appendix A). The Internal Review Board (IRB) at West Virginia University also granted permission (see Appendix B).

Participants in the Study

Participants in the study comprised of 50 students and their parents, for a combined total of 100 participants. Among the sample, twenty-three students were in 9th, 10th, and 11th grade geometry, and 27 students in two 9th grade science classes (coordinated and thematic science 9), participated in the study. Math and science were selected for the study because these were the subjects that met the necessary criteria for HW as defined in chapter one. That is, HW was regularly assigned classwork that is completed during non-school hours, required to be completed and returned, checked by the teacher upon return, and recorded as complete or incomplete (Cooper, 1989).

Methods and Materials

Data were collected for students and parents through the teachers' grade book, students' records, and two survey instruments – Bandura's Children's Self-Efficacy Scale (1990) and The Parent Involvement Scale, constructed by the investigator specifically for this study. The first three of these media were used to collect student data, and the fourth was used to collect parent data.

Teachers' grade books were used to compile data on HW (see Appendix C for a sample of grade book entries). Homework scores were calculated based on work that was assigned as an out-of-class task, for a grade, to be completed during after school hours. Scores were summed to compute a single composite HW score for each

student. The composite score was in data analysis. The second source used to collect data was students' records. Records were accessed through the school's computer database to collect CGPA for each student. The CGPA was used as an obtained score in data analysis hypothesis testing. All CGPA used in the study are indicative of the student's true cumulative score. For example, the CGPA for a 10th grade participant included grade point averages for grades nine and 10.

Student data for SRL were collected with Bandura's scale (1990). This seven-point Likert scale has nine subscales with a total of 57 items. The full scale comprises of Self-efficacy in Enlisting Social Resources, Self-efficacy for Academic Achievement, Self-efficacy for Regulated Learning, Self-efficacy for Leisure Time Skills and Extracurricular Activities, Self-regulatory Efficacy, Self-efficacy to Meet Others' Expectations, Social Self-efficacy, Self-assertive Efficacy, and Self-efficacy for Enlisting Parental and Community Support. Each item in the scale consists of a stem in the form of a question, followed by a seven point Likert scale. Respondents were asked to circle the number that best answered the question. Below are the items used in the present study for SRL. The measurement for the items is the same for all and is given here once, in the first item, as an example. The full scale can be viewed in Appendix D.

SRL items.

How well can you finish homework assignments by deadlines?

1	2	3	4	5	6	7
<i>Not well at all</i>		<i>Not too well</i>		<i>Pretty well</i>		<i>Very well</i>

How well can you study when there are other interesting things to do?

How well can you concentrate on school subjects?

How well can you take class notes of class instruction?

How well can you plan your schoolwork?

How well can you organize your schoolwork?

How well can you remember information presented in class and textbooks?

How well can you arrange a place to study without distractions?

How well can you motivate yourself to do schoolwork?

How well can you participate in class discussions?

For the purpose of addressing the research hypotheses of this study about SRL, items in the Self-efficacy for Self-regulated Learning subscale were summed to form a composite score. The composite score was used to test hypotheses about SRL. A sheet of demographic questions was added to the Bandura Scale because it singularly did not ask for demographics. Permission was granted by Dr. Bandura to use his instrument for this investigation (see Appendix E). There was no charge for use of the scale.

Parent data were collect with the Parent Involvement Scale (PIS). The PIS was created by the researcher specifically for this investigation. The PIS was developed because during the review of literature, no studies were found that employed an existing instrument that could be used in the present study. That is, currently there is no measure that treats homework exclusively as a function of PI. Although Eagle's (1989) study of PI defined it as assistance with homework, her broader definition included other variables that are not a part of the current investigation. The PIS was designed based on the definition of PI given in chapter one – any form of verbal or non-verbal communication or assistance in reference to a child's homework. The scale was constructed with two major sections. The first, comprising of six items, solicited information about the person who completed the form. The second major division – a five point Likert-type scale – requested information about the respondent's involvement

After the PIS was developed, it was piloted with a group of 12 graduate students from a Research Methodology class at West Virginia University. Other than face validity, which was established during piloting, the PIS has not been empirically validated. This instrument may gain credibility in the future by establishing concurrent validity, and construct validity (Dane, 1990). In addition to validity, reliability can also add to the credibility and acceptance of the PIS. Some of the reliability techniques that might be used to establish reliability coefficients for the PIS are test-retest reliability, alternate forms reliability, and item-total reliability (Ebel & Frisbie, 1991). Future studies may look to establish validity and reliability properties for the PIS.

The students, some of whom were parents and teachers, were administered the instrument during one of their regular class sessions. Each was asked to complete the scale and critique it for accuracy on what it purports to measure. Following a two-week passage of time, and slight modifications based on the recommendations of the piloting group, the instrument was readministered to the same group of students to establish test-retest reliability estimates ($r = .863$). The PIS was then sent, via postal mail, to the parents of all 50 students selected for the study. A letter from the high school participating in the study was sent to parents, informing them of the research and inviting them to participate (see Appendix G). Parents were asked to complete and return the scale to the school's administrative office. Parents were provided with a self-addressed stamped envelope to return the instrument. Two weeks later surveys were collected from the school for analysis. At the time of collection, 20 of the 50 surveys (40%) had been completed by a parent, or a legal guardian, and returned to the school's administrative office. Parents who did not return the survey were contacted by

telephone and invited to complete the survey over the phone. Fifteen parents (30%) completed the survey by phone. A total of 35 surveys were entered for data analysis, which corresponded to a 70% overall return rate. Results of responses from the PIS are reported in chapter four. Each parent who participated received a \$5.00 Wal-Mart gift certificate. The Office of Academic Affairs (doctoral student research program) provided funding for the gift certificates.

Procedures Used in Collecting Data

Data were collected from students during a single class session (approx. 50 minutes). Two trained assistants from West Virginia University assisted in data collection for this study. The assistants were trained by the researcher prior to data collection. Following is the training procedure for the two assistants. The day before collecting data, the assistants were given a copy of the Scale in order to familiarize themselves with it. On the day of data collection, the primary researcher (PR) and the assistants spent an hour rehearsing what would be done in data collection. An empty classroom at the school site was used for rehearsal. Following is what occurred during rehearsal. The PR modeled giving instructions, distributing the scale, fielding questions, and collecting the scale. A script was used as a guide for what was to be done, both during rehearsal and in actuality (see Appendix H for the script). After modeling what the assistants should do, the PR asked each of the assistants, with the assistance of the script, to replicate what they saw. The PR gave the assistants feedback based on how they performed. Problem areas were repeated until they performed without error.

During the regularly, scheduled class session the two assistants administered the Bandura scale to the math and science classes. Study participants were given verbal

instructions by the assistants on how to complete the scale, and then asked to complete it. After completion, the assistants collected the data, put it in a sealed envelope and returned it to the principal's office. All students who participated in the research completed the Bandura scale.

Data Analysis

According to Kiess (1996), four assumptions must be met to conduct parametric statistical tests. These assumptions are (1) normal distribution of population sampled, (2) homogeneity of variances, (3) random sampling and, (4) at least interval strength data. Because the present study gathered data that are primarily of ordinal strength, and because participants were not randomly selected, the study violates the assumptions for parametric statistical tests. Therefore, this study used non-parametric statistical analyses. The Spearman Rho was used to test null hypotheses one through six. Hypotheses seven through 10 were tested with the Mann Whitney U statistic because these four hypotheses considered differences between scores. This statistic was also used because it is the non-parametric measure to be employed when examining differences where assumptions for parametric tests are violated, as was the case with this data set.

The levels of data being collected are ordinal and ratio. Data from the Children's Self-Efficacy Scale are of ordinal strength, data for the PIS are of ordinal strength, and data from CGPA are of ratio strength. See the table below for types of variables. The computerized Statistical Package for the Social Sciences (SPSS v.10.0) was used to assist with data analysis. All hypotheses were tested at the .05 level of significance, two tailed.

 Table 1

Description of variables used in this study for hypotheses seven through ten

<u>Independent Variable</u>	<u>Dependent Variable</u>
Gender	SRL
Gender	PI
Gender	HW
Gender	CGPA

Research hypotheses

- H_{A1}: There is a relationship between SRL and grade point average.
- H_{A2}: There is a relationship between PI and grade point average.
- H_{A3}: There is a relationship between HW and grade point average.
- H_{A4}: There is a relationship between SRL and PI.
- H_{A5}: There is a relationship between SRL and HW.
- H_{A6}: There is a relationship between PI and HW.
- H_{A7}: There is a difference between gender on SRL.
- H_{A8}: There is a difference between gender and PI.
- H_{A9}: There is a difference between gender on HW.
- H_{A10}: There is a difference between gender on CGPA.

Null hypotheses

- H₀₁: There is no statistically significant relationship between SRL and grade point average.
- H₀₂: There is no statistically significant relationship between PI and grade point average.
- H₀₃: There is no statistically significant relationship between HW and grade point average.
- H₀₄: There is no statistically significant relationship between SRL and PI.
- H₀₅: There is no statistically significant relationship between SRL and HW.
- H₀₆: There is no statistically significant relationship between PI and HW.
- H₀₇: There is no statistically significant difference between gender on SRL.
- H₀₈: There is no statistically significant difference between gender and PI.
- H₀₉: There is no statistically significant difference between gender on HW.
- H₀₁₀: There is no statistically significant difference between gender on CGPA.

CHAPTER FOUR

Analysis and Results

The present study examined the relationships among self-regulated learning (SRL), parental involvement (PI), homework (HW), and cumulative grade point average (CGPA). It also investigated the differences between gender and the same four variables. Data were collected from a total of 85 participants – 50 students and 35 parents. Descriptive data for sample are presented in table two. Student data were compiled from teacher's grade book for HW, school records for CGPA (see figure 1), and Bandura's Children's Self-Efficacy Scale for SRL.

Table 2
Student Data

	N	(%)
<u>Gender</u>		
Males	26	52
Females	24	48
<u>Grade</u>		
9 th grade	27	54
10 th grade	19	38
11 th grade	4	8
<u>Class</u>		
Geometry	23	46
Science	27	54

Parent data were collected through the Parent Involvement Scale (PIS), which was developed by the researcher specifically for this investigation. Participants were asked to complete the scale that comprised of two sections. The first section requested information about the person who completed the scale. Participants were asked to

indicate (1) who was completing the survey, (2) degree of contact with student in the study, (3) gender, (4) race, (5) description of schooling, and (6) degree of skills for helping with HW. Of the 35 persons who responded to the survey, all were parents – that is, of the choices on the survey, (parent, stepparent, grandparent, foster parent, guardian, and other) with respect to who completed the instrument, all respondents selected “parent.” The majority of respondents (34) were parents who had the most contact with students in the study with reference to school. Most respondents (80%) were female and were white (97%). The majority of parents graduated from high school and some had post secondary training and degrees (see figure 2). Many parents said they thought they had good skills to help their child with HW (see figure 3). The second section solicited information about the respondent’s involvement with the student. Most parents (74%) indicated that “every schoolday of the week” they had a conversation with their child about school, and that they (73%) specifically asked if homework were assigned for that day. Students (45%) rarely requested parents’ assistance with homework, and parents (50%) rarely assisted with it. However, “every schoolday” parents (34%) did assist with scheduling homework time, and most (43%) checked homework for completion, although most (34%) “rarely” checked for correctness. Most students (43%) spent “30-60 minutes per day” on homework assignments, and most parents (47%) who assisted with homework spent “30-60 minutes per day” helping their child. Parents were about equally involved with homework (“rarely involved” – 26%; “moderately involved” – 23%; “strongly involved” – 26%; “very strongly involved” – 26%). A full scale of the PIS can be viewed in Appendix F.

The present study tested 10 hypotheses. The first six hypotheses investigated the relationships among SRL, PI, HW, and CGPA. The next four hypotheses (seven through 10) examined the differences between gender on the same four variables. The Spearman Rho (r_s) was used to test hypotheses one through six. This nonparametric statistical test was used because more than one the four assumptions for using parametric tests (normal distribution of population sampled, homogeneity of variances, random sampling and, at least interval strength data) was violated. Similarly, the nonparametric Mann Whitney \underline{U} was used to examine the other four hypotheses. All 10 hypotheses were tested using an alpha of .05 level of significance, two tailed.

Figure 2. Description of parent's educational level

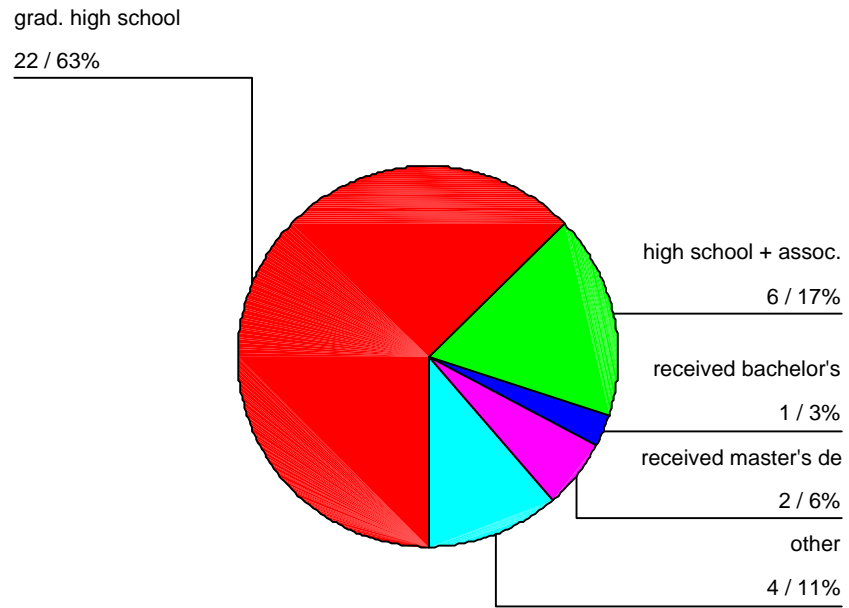
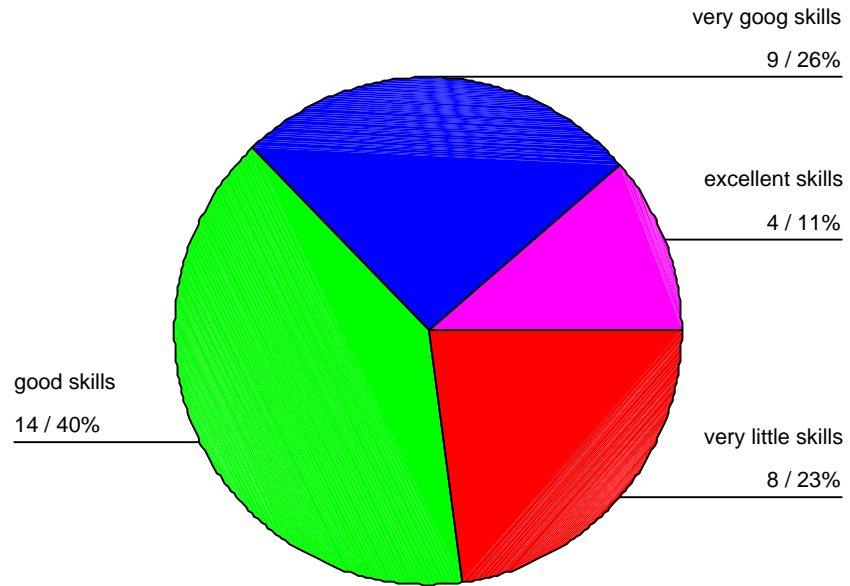


Figure 3. Description of parent's skill level with homework



The Statistical Package for Social Sciences (v.10.0) was used for all data analysis. The results reported are presented in the form of hypothesis testing.

Hypotheses

Tests of relationships.

1. There is a relationship between SRL and CGPA.

The first hypothesis examined the relationship between SRL and CGPA. Findings from the Spearman Rho indicated a statistically significant positive relationship between SRL and CGPA, $r = .314$, $p = .026$, $n = 50$. Based on these results, the null hypothesis was rejected and the research hypothesis (H_{A1}) was accepted. This finding suggests that students, in this sample, who are self-regulated learners tend to have higher cgpa's than students who are not self-regulated learners.

2. There is a relationship between PI and CGPA.

The second hypothesis examined the relationship between PI and CGPA. Findings from the Spearman Rho indicated that there was no statistically significantly relationship between PI and CGPA, $r = .005$, $p = .978$, $n = 50$. Based on these results, the null hypothesis was not rejected and the research hypothesis (H_{A2}) was not accepted. This finding suggests that there is no evidence, based on this sample, of support for a relationship between PI and CGPA.

3. There is a relationship between HW and CGPA.

The third hypothesis examined the relationship between HW and CGPA. Findings from the Spearman Rho indicated there is a positive statistically significant relationship between HW and CGPA, $r = .594$, $p = .000$, $n = 50$. Based on these results, the null hypothesis was rejected and the research hypothesis (H_{A3}) was accepted. This finding

suggests that the higher the degree of HW completion, the higher a student's cgpa for students in this sample.

4. There is a relationship between SRL and PI.

The fourth hypothesis examined the relationship between SRL and PI. Findings from the Spearman Rho indicated there was no statistically significant relationship between SRL and PI, $r = .032$, $p = .856$. Based on these results, the null hypothesis was not rejected and the research hypothesis (H_{A4}) was not accepted. This finding suggests that there is no evidence, based on this sample, of support for a relationship between PI and SRL.

5. There is a relationship between SRL and HW.

The fifth hypothesis examined the relationship between SRL and HW. Findings from the Spearman Rho indicated a statistically significant positive relationship between SRL and HW, $r = .475$, $p = .000$, $n = 50$. Based on these results, the null hypothesis was rejected and the research hypothesis (H_{A5}) was accepted. This finding suggests that, for this group of students, the more self-regulated students are, the greater the likelihood of them completing HW, and vice versa.

6. There is a relationship between PI and HW.

The sixth hypothesis examined the relationship between PI and HW. Findings from the Spearman Rho indicated there was no statistically significant relationship between PI and HW, $r = .119$, $p = .495$, $n = 50$. Based on these results, the null hypothesis was not rejected and the research hypothesis (H_{A6}) was not accepted. This finding suggests that there is no evidence, based on this sample, of support for a relationship between PI and HW.

Tests of differences.

7. There is a difference between gender on SRL.

The seventh hypothesis examined the difference between gender on SRL. The Mann Whitney U was conducted using SPSS (v.10.0). Findings from the Mann Whitney U indicated a statistically significant difference between gender (189.500, $p = .017$, $n = 50$). Thus, females in this sample ($M = 56.08$, $SD = 8.73$) scored significantly higher than males ($M = 48.62$, $SD = 12.07$) on Bandura's Self-Efficacy Scale. Based on these results, the null hypothesis was rejected and the research hypothesis (H_{A7}) was accepted. This finding suggests females, in this sample of students, are more self-regulated learners than males.

8. There is a difference between gender on PI.

The eighth hypothesis examined the difference between gender on PI. The Mann Whitney U was conducted using SPSS (v.10.0). Findings from the Mann Whitney U indicated no statistically significant difference between gender (112.000, $p = .184$, $n = 50$). Thus, females in this sample ($M = 18.41$, $SD = 6.48$) did not score significantly different than males ($M = 20.83$, $SD = 5.67$) on PI. Based on these results, the null hypothesis was not rejected and the research hypothesis (H_{A8}) was not accepted. This finding suggests that there is no evidence, based on this sample, of support for a difference between gender on PI.

9. There is a difference between gender on HW.

The ninth hypothesis examined the difference between gender on HW. The Mann Whitney U was conducted using SPSS (v.10.0). Findings from the Mann Whitney U

indicated a statistically significant difference between gender (178.000, $p = .009$, $n = 50$). Thus, females in this sample ($M = 281.79$, $SD = 23.51$) scored significantly higher than males ($M = 229.92$, $SD = 84.46$) on HW. Based on these results, the null hypothesis was rejected and the research hypothesis (H_{A9}) was accepted. This finding suggests that females, in this sample of students, have a higher completion rate of HW than males of the same sample.

10. There is a difference between gender on cgpa.

The tenth hypothesis examined the differences between gender on CGPA. The Mann Whitney U was conducted using SPSS (v. 10.0). Findings from the Mann Whitney U indicated no statistically significant difference between gender (228.500, $p = .105$, $n = 50$). Thus, females in this sample ($M = 2.87$, $SD = .99$) did not score significantly different than males ($M = 2.53$, $SD = .97$) on CGPA. Based on these results, the null hypothesis was not rejected and the research hypothesis (H_{A10}) was not accepted. This finding suggest that there is no evidence, based on this sample, of support for a difference between gender on CGPA.

The results above indicate statistically significant positive relationships between SRL and CGPA, between HW and CGPA, and between SRL and HW, and statistically significant differences between gender on SRL and between gender on HW. The study also found that there were no statistically significant relationships between PI and CGPA, between PI and SRL, and between PI and HW. There were also no statistically significant differences between gender on PI, and between gender on CGPA. The next chapter will discuss these results.

CHAPTER FIVE

Summary and Discussion

The final chapter of the dissertation reiterates the statement of the problem, and briefly reviews the methods employed to conduct the research. The major sections of this chapter summarize research findings and discuss theoretical and practical implications of those findings. Finally, the chapter identifies limitations of the study and makes recommendations in light of the findings.

While research is voluminous on self-regulated learning (SRL), parental involvement (PI), and homework (HW) as single constructs, and although there are many studies that have looked at any combination of two of these variables, there is currently no study that has investigated them collectively. Therefore, the purpose of the current study was to extend the body of knowledge in educational psychology and narrow the existing gap in the literature by asking the question, “What relationships are there among self-regulated learning, parental involvement, homework, and academic achievement, and what differences are there between gender on these variables for high school students in rural West Virginia?” To answer the question, the current research studied the relationship among SRL, PI, HW, and cumulative grade point average (CGPA), and examined the differences between gender on these variables.

Participants in the study comprised of 50 students, in grades nine through 12, ranging in age from 14-21. All students were from the same public high school in rural North Central West Virginia. Thirty-five parents of students, who were selected for the study, also participated in the research. There was a total of 85 participants in this study. Twenty-three students were in 9th, 10th, and 11th grade geometry, and 27

students in two 9th grade science classes (coordinated and thematic science 9), participated in this study. Math and science were selected for the study because these were the subjects that met the necessary criteria for HW as defined in chapter one. That is, HW was regularly assigned as an out-of-class activity that had to be completed during non-school hours, and returned for a grade. The HW variable was directly tied to the PI variable through the PIS. That is, the PIS which was developed to collect PI data focused specifically on HW. For the present research, PI was defined as any form of verbal or non-verbal communication or assistance in reference to a child's homework.

The research used a numerical approach to collect and analyze data. In examining the relationships among variables, correlational statistics were employed. In this particular study the Spearman Rho was used for analysis. This statistic was used, rather than the preferred Pearson's r because the four assumptions for conducting parametric tests were violated. Because of this same reason, the nonparametric Mann Whitney U statistic was used to analyze the differences between gender on the variables under investigation.

Data were collected for students and parents through the teachers' grade book, students' records, and two survey instruments – Bandura's Children's Self-Efficacy Scale (1990) and The Parent Involvement Scale, constructed by the investigator specifically for this investigation. The first three of these media were used to collect student data, and the fourth was used to collect parent data.

Teachers' grade books were used to compile data on HW. Homework scores were calculated based on work that was assigned as an out-of-class activity, for a grade, to be completed during after school hours. Scores were summed to compute a

single composite HW score for each student. The composite score was used in data analysis. The second source used to collect data was students' records. Each student's CGPA was retrieved from the school's centralized computer database system. The CGPA was used as an obtained score in data analysis hypothesis testing. Student data for SRL was collected with Bandura's scale. This Likert-type scale has nine subscales with a total of 57 items.

The present study found statistically significant positive relationships between SRL and CGPA, between HW and CGPA, and between SRL and HW; and statistically significant differences between gender on SRL, and between gender on HW. The study also found that there were no statistically significant relationships between PI and CGPA, between PI and SRL, and between PI and HW. There were also no statistically significant differences between gender on PI, and between gender on CGPA. The results of this study found no statistically significant relationships or differences between PI and any of the other variables investigated. These findings comprise the remainder of the discussion in this chapter.

The finding of a statistically significant positive relationship between SRL and CGPA suggests that, in this sample, students who are self-regulated learners tend to have higher CGPA's than students who are not self-regulated learners. In light of the general findings of SRL in literature – as it relates to academic achievement – the finding here makes sense. Specifically, it is consistent with the findings of Williams (1996) who conducted research using the Bandura Scale with students from a similar rural high school community. The findings of the current study are also in keeping with those of Pintrich and De Groot (1990) who found that students who believed they could

accomplish a task, were more likely to report the use of cognitive strategies and, be more self-regulating in terms of reporting more use of metacognitive strategies, and persist more often at difficult or interesting academic tasks. The Pintrich and DeGroot (1990) study was examined as a part of the literature review for the present investigation.

The second statistically significant positive relationship was found between HW and CGPA. This finding suggests that the higher the degree of HW completion, the higher a student's CGPA, for students in this sample. This finding is consistent with that of Cooper (1989), who reviewed 50 studies that correlated HW with academic achievement and found 47 of them to have statistically significant positive correlations. Of course correlation does not mean causation, and no such inference is intended here.

The last statistically significant finding of a positive relationship, in this study, was between SRL and HW. The finding suggests that, for this group of students, the more self-regulated students are, the greater the likelihood of them completing HW, and vice versa – this makes sense. Reason alone might suggest that if statistically significant positive relationships were found between SRL and CGPA, and between HW and CGPA, that there would be a high probability of a statistically significant positive relationship between SRL and HW. This finding also makes sense because, given that self-regulated learners are individuals who exercise control in the learning process by planning, monitoring, selecting, creating, and structuring their learning environment, and HW is an activity that requires such skills, the student who is a self-regulated learner would be more likely than the non-self-regulated learner, to complete HW. The finding of a positive relationship between SRL and HW, here, is supported by Corno (1994).

Her research examined elements of SRL and concluded that elements like HW facilitate SRL. In addition to findings of statistically significant relationships, there were two findings of statistically significant differences between males and females.

The first finding of statistically significant difference between gender, was on SRL. The finding showed that, in this sample of students, females were more self-regulated learners than males. This finding is similar to Niemivirta (1997) who found gender differences in motivational-cognitive patterns of SRL. This finding, however, is quite different from what Wolters and Pintrich (1998) found and what Laveault (1999) and his colleagues found. These two sets of researchers found no differences between gender in regulatory strategy use or success at task completion in class or at home. Why is this latter finding different? One possible explanation for this difference in findings is that the present study examined SRL among ninth, 10th, and 11th graders whereas the studies with differing results considered sixth through eighth graders. Perhaps, future research similar to the current one will replicate the study at the junior high school level.

The only other finding, in this study, of statistically significant difference between gender, was on HW. Females, in this sample of students, had higher completion rates of HW than males of the same sample. Like the previous statistically significant finding in this study on gender differences, this result on gender and HW differs from earlier research that investigated differences between gender on HW (Hong, 1999; Warton, 1993). Hong (1999) studied, HW style preference and HW environment in high versus low achieving Chinese students. He found no gender difference on HW. Similarly, Warton (1993) in her investigation of children's practices and ideas or perceptions about

self-regulation for completing HW, found no gender differences. Once again this dissimilarity between findings from the present study and previous research might be explained by difference in grade level. The notion of difference in results in relation to grade level and HW has merit based on the findings of Cooper (1989). He found a significant difference between elementary, middle, and high school on the effectiveness of HW. Homework at the elementary level was of no effect, HW at the middle level was of minimal effect, but HW at the high school level had strong effects. The point here is that other studies differ from the present study in finding a difference between gender on HW because those studies examined students for whom differences on HW would not be expected, based on previous research – those at the elementary and middle schools levels. Future research might consider replicating this study with elementary and middle school students rather than high school students. A difference in findings between the present study and others may also be explained by motivation. Gender differences on HW and motivation have been found to be statistically significant (Thibert & Karsenti, 1996). Future research might lend to a more informed understanding if this study were replicated with a motivation measure included.

The present study also found no statistically significant relationships between PI and CGPA, between PI and SRL, and between PI and HW; and no statistically significant differences between gender on PI, and between gender on CGPA. That is, this study found no statistically significant relationships or differences between PI and any of the other variables investigated. This is an interesting and conceivably significant finding because much of the research, to date, on PI and the other variables report statistically significant results (e.g., Aeby, Thyer, Carpenter-Aeby, 1999; Bauch,

1994; Keith, Keith, Quirk, Sperduto, Santillo, Killings, 1998). The ensuing discussion focuses on the non-statistically significant findings, beginning with the finding of no statistically significant difference between gender on CGPA.

The finding of no statistically significant difference between gender on CGPA was the only one where no statistical significance was found and it was not associated with PI – all other non-statistically significant findings were associated with PI. This finding of no statistically significant difference between gender on CGPA suggests that, for this sample of students, there is no evidence to support a difference between gender. That is, males and females were equally capable of performing well or performing poorly academically. It may mean that in reference to the other variables investigated, in this study, although females were more self-regulated than males, males were equally capable of being self-regulated; and although females had a slightly higher HW completion rate, males were equally capable of completing as much HW.

As mentioned earlier, there were no statistically significant findings when PI was associated with any other variable in this study. What this means is, based on this study, there is no evidence of support for a relationship between PI and the other variables, and no evidence of support for a difference between gender on PI and the other variables. These findings are interesting and might be a significant addition to the existing body of literature on PI.

The findings on PI are interesting because given the definition of PI – any form of verbal or non-verbal communication or assistance in reference to a child's out-of-school activities – and given the interrelatedness between molecular items among the variables (e.g. parent asking a child about HW completion, and HW completion leading itself to

higher cgpa) – one would expect relationships to exist between PI and the other variables, and differences to be found between gender on PI and the other variables. This, however, is not the case. But why? Are Baker and Soden (1997) correct in their criticism of correlational research on PI, when they argue that research on PI is methodologically flawed because of the use of non-experimental designs, as was this investigation, or flawed because of the use of non-objective measures as this study did? Is it the case that, in reference to PI, relationships and differences do exist and were not found because of flawed methodology? Probably not, Baker and Soden (1997) themselves, although they criticized researchers' failure to use experimental designs, grant that because of the complexity and financial burden of experimental designs, correlational studies can offer meaningful contributions. Perhaps there are several reasons why no statistically significant relationships and differences were found on the PI variable. First, conceivably, the sample used in this study was too small. That is, there wasn't sufficient power in the sample to detect relationships and differences that might have existed. Accordingly, future studies should consider using larger sample sizes. Second, relationships and differences were not detected because the sample was too homogeneous – too similar – not representative. That is, possibly, there wasn't sufficient variance among parent participants – all were Caucasian. Future studies should broaden the scope of the sample to include parents of divergent ethnicity. And, finally, possibly no relationships and differences on PI were detected because the instrument – the PIS – failed to capture the broader meaning of PI. If so, future research should look to build upon or improve this instrument by focusing on a broader range of PI issues in addition to HW. Such a change might be made, but should be

done so only after the previous two recommendations have been followed. That is, changes to the PIS should come only after other studies have used it with larger and more heterogeneous sample sizes. The researcher's critique offered here about the PIS is intended purely as a scholarly effort to gravitate toward objectivity so as to better interpret and understand these findings on PI. However, it is the opinion of this researcher that based on these results for PI from this investigation, this study did what Baker and Soden (1997) called for in their recommendations – isolate for the effects of PI. That is, they suggested a study be conducted where only biological parents were a part of the research, as did this investigation – albeit serendipitously. Given, then, the interrelatedness of the variables used in this study, and the findings on PI and those variables, this researcher contends that while no definitive statements should be made nor conclusions drawn about the non-statistically significant findings on PI or what they might mean, if anything, these findings might offer something to think about. Because these findings on PI are so different than what is often cited in the literature, at a minimum, they invite thoughts of replication of this study to challenge or support what was found here. In conclusion, the question proffered by this research has been answered. The question: “What relationships are there among self-regulated learning, parental involvement, homework, and academic achievement, and what differences are there between gender on these variables for high school students in rural West Virginia?” The answer: according to this investigation, there were statistically significant positive relationships between SRL and CGPA, between HW and CGPA, and between SRL and HW, and statistically significant differences between gender on SRL and between gender on HW. There were also no statistically significant relationships

between PI and CGPA, between PI and SRL, and between PI and HW, and no statistically significant differences between gender on PI, and between gender on CGPA. In short, on the one hand, these findings offered some knowledge and insight into things previously not available in the literature and, on the other hand this new knowledge provided new directions for further discovery. The new directions are presented in the form of recommended research that is later discussed in this chapter. But first, based on what we know from the present study, following is a discussion of the implications of the research findings.

Implications of Research Findings

In chapter one, the researcher study argued that this specific investigation was necessary in order to “narrow the gap” in existing literature on the variables examined. Accordingly, efforts are made to do so by discussing, here, the implications of the current research findings. The ensuing discussion, from a variable perspective, reiterates the findings of the investigation, and then articulates the implications of those findings.

In reference to SRL this study found a statistically significant positive relationship between SRL and CGPA which suggests that students who are self-regulated learners tend to have higher CGPA's than students who are not self-regulated learners; a statistically significant positive relationship between SRL and HW, which suggests that the more self-regulated students are, the greater the likelihood of them completing HW; a statistically significant difference between gender on SRL which showed that, in this sample of students, females were more self-regulated learners than males; and no statistically significant relationships between SRL and PI.

The practical implication of these findings is that students benefit from self-regulated learning practices, and that they themselves – as self-regulated learners in high school – sculpt, in part, their academic achievement. Accordingly, educators – classroom teachers, school principals, and administrators of policies and best practices – should look for ways to develop, promote, and encourage students to become self-regulated learners.

Classroom teachers might begin this process by fostering SRL practices with their students by challenging them to be metacognitively, motivationally, and behaviorally engaged in learning tasks. For example, during a class session a teacher might foster metacognition by asking his students if they are aware of whether or not they are comprehending the material as it is being presented. Further, he might foster motivation by asking if each is accomplishing what the teaching unit intended to offer; and yet further he might foster behavioral changes by asking students to make a note of what they did, or need to do, in order to benefit from the instructional session.

With respect to HW, the present study found a statistically significant positive relationship between HW and CGPA, which suggests that the higher the degree of HW completion, the higher a student's CGPA; a statistically significant positive relationship between SRL and HW, which suggests that the more self-regulated students are, the greater the likelihood of them completing HW; a statistically significant difference between gender on HW, which showed that females, in this sample of students, had higher completion rates of HW than males; and no statistically significant relationships between HW and PI.

The practical implication of these findings is that HW does have merit with high school students as related to SRL and CGPA. And, although the study found a statistically significant difference between gender on HW in favor of females, the associated finding of no statistically significant difference between gender on CGPA suggests that males are capable of performing equally well, academically, as their female counterparts. Therefore, school administrators should formulate and enact homework policies, practices, and procedures that lend themselves to development and promotion of SRL, and classroom teachers should assign HW that cultivates, encourages, and nurtures this phenomenon within each student. For example, a teacher could assign a reading on digestion where a student would engage in self-monitoring – becomes aware that she is unclear about some aspects of the process of digestion – and then exercises self-control – makes a note of questions that she will ask her teacher at the next class session – because she is goal oriented – she wants to fully understand the digestive process. Such behaviors cultivate and nurture SRL because the student consciously recognizes that she does not understand the material as well as she would like, and she, herself, takes measures to facilitate understanding. Again, classroom teachers could increase their repertoire of effective ways of assigning HW that cultivates, encourages, and nurtures SRL within each student by following the suggestions made earlier about familiarizing themselves with the theory and practices of SRL.

With respect to the findings on PI, the present study found no statistically significant relationships between PI and CGPA, between PI and SRL, and between PI and HW; and no statistically significant differences between gender on PI. That is, this

study found no statistically significant relationships or differences between PI and any of the other variables investigated. As discussed earlier in this chapter, these findings are interesting and conceivably important because much of the research, to date, on PI and the other variables report statistically significant results (e.g., Aeby, Thyer, Carpenter-Aeby, 1999; Bauch, 1994; Keith, Keith, Quirk, Sperduto, Santillo, Killings, 1998).

The practical implication of these findings is that academic achievement at the high school level appears to be more a function of independent student performance than parental involvement. Therefore, educational policies and practices at the high school level that look to impact students' academic achievement should focus on what students, themselves, can and need to do, separate and apart from parents.

The aforementioned implications of the findings of this research study have been provided as a way of interpreting the results so as to meaningfully narrow the gap in existing literature. This researcher recognizes that despite the efforts of this single investigation, a gap – albeit proportionately smaller - still exists due to the limitations of the study. Those limitations are discussed next.

Limitations of the Study

First, like all correlational research where the objective is to determine relationships, this study examined the relationship among SRL, HW, PI, and CGPA and can speak only to the existence or non-existence of those relationships. Thus, this study cannot and does not say whether or not one variable influences or effects another, nor can it or does it say if there is an influences or an effect, to what degree that influence or effect exists. Second, this study is limited in its generalizability. That is, research was conducted at a high school in rural America with a 97% Caucasian

sample. The results, therefore, cannot be applied to populations that are of a different complexion – elementary and middle schools in suburban and urban settings with more ethnic diversity, for example. Third, in reference to HW, the present study did not examine accuracy of completion as a factor for analysis. Future studies should consider completion accuracy as a moderator variable of completion rate on CGPA. Additionally, this study is limited in what can be said directly about HW and, math and science because analysis for the study was based on overall grade point average, not only scores for these two subject areas. Future studies may examine this. Fourth, the sample size of this study is relatively small. As such the results of the study should be read with the understanding that some results could possibly have been different if the study was designed with more participants. Fifth, the Parental Involvement Scale (PIS) that was developed specifically for the study is new and has received very limited exposure to empirical scrutiny. Therefore, cautious confidence is exercised in interpreting results from this instrument until scholarly behavior deems otherwise. Sixth, because parent responses from the PIS were captured both by mail and by telephone, which may yield different results than if all responses were collected by mail as originally designed, and because of the lack of evidence of the sensitivity of the instrument to, particularly, phone responses, results should be accepted cautiously. And finally, other than face validity, which was established during piloting, the PIS has not been empirically validated. Therefore, results, interpretations, and conclusions are limited to scientific uncertainty until validity and reliability properties for the instrument are established. These limitations are offered as a platform to guide the formulation of

new queries. Such queries might be assisted by the recommendations of this study. They are next.

Recommendations for Future Research

This study's first recommendation is based on the finding of differences between gender on SRL. The finding showed that, in this sample of students, females were more self-regulated learners than males. This finding is similar to Niemivirta (1997) who found gender differences in motivational-cognitive patterns of SRL. This finding, however, is quite different from what Wolters and Pintrich (1998) found and what Laveault (1999) and his colleagues found. These two sets of researchers found no differences between gender in regulatory strategy use or success at task completion in class or at home. The disparity in results may be explained by the difference between junior and senior high school samples that were used. Thus, future research might replicate this study with elementary and middle school students to determine if the difference that was found between gender on SRL, holds true for students at other levels of schooling.

The second recommendation is based on finding of differences between gender on HW. Females, in this sample of students, had higher completion rates of HW than males of the same sample. The finding in the current study was at odds with other studies, as discussed earlier in this chapter. Once again this dissimilarity between findings from the present study and previous research might be explained by difference in grade level. But in the absence of empirical evidence, such an explanation is conjecture. To better understand differences between gender on HW, future research might replicate this study with students other than high school students. Other research

might examine all levels of schooling with an added dimension of a motivation measure to determine if motivation plays a role. Additionally, the present study did not examine accuracy of HW completion as a factor for analysis. Future studies might look at completion accuracy as a moderator variable of completion rate on CGPA. Also, because this study considered all of a student's scores (CGPA) in data analysis, results may have been different if just math and science scores were analyzed. Therefore, future studies might consider such a modification. Third, despite what appears to be meaningful contributions by this investigation based on its findings, they cannot be offered beyond the boundaries of its sample because of its small size and its homogeneity – the findings are not very generalizable. The generalizability of similar studies might be aided by larger, more representative samples of students and parents. Future research might replicate this study with this in mind. In addition to this study's inability to generalize, it also cannot make any claims of cause and effect or influence. This is due to the limitations of its correlational design. Therefore, future research should aid in bolstering the collective claims of these variables by conducting using research methods that lend to cause and effect conclusions.

Fourth, this study elected to use the Bandura Scale and the Parental Involvement Scale to collect data. These are not the only available instruments to collect data on parents and students. Subsequently, future research could examine the same variables with different scales. Doing so would assist in continuously narrowing the gap in the literature.

Finally, this study appears to be a good start for examining what the PIS might add as empirical evidence to the phenomenon of PI. Future studies should use this

instrument in order to further develop, legitimize, and validate it, and to establish validity and reliability properties it. Future research should look to establish concurrent validity, and construct validity. In addition to validity, reliability can also add to the credibility and acceptance of the PIS. Some of the reliability techniques that might be used to establish reliability coefficients for the PIS are test-retest reliability, alternate forms reliability, and item-total reliability.

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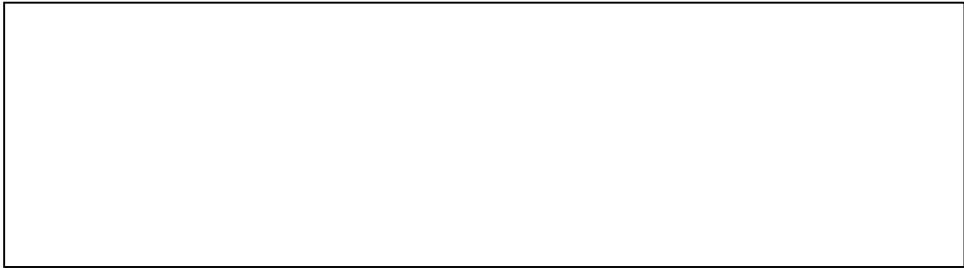
Appendix A



To Whom It May Concern;

Please accept this letter as evidence that Mr. Sam Heastie has requested and been granted permission to collect data for educational research at [redacted] Mr. Heastie has indicated that he will be working with students in [redacted] class and [redacted] class.

The school understands that Mr. Heastie will provide signed consent forms from the parents of all students involved before students will be permitted to participate and before any academic information is released to him. It is also understood that all students will sign a student assent form before participating in the study.



Appendix B



West Virginia University

College of Human Resources and Education

June 22, 2000

MEMORANDUM

TO: Samuel Heastie
FROM: Ernest R. Goeres ~~_____~~
Associate Dean
RE: Human Resources & Education H.S. #2000-074

**Title: "The Relationship Among Self-Regulated Learning
Parental Involvement and Homework"**

Your Application for Exemption for your above-captioned research project has been reviewed under the Human Subjects Policies and has been approved.

This exemption will remain in effect on the condition that the research is carried out exactly as described in the application.

Best wishes for the success of your research.

cc: Deans Office
Student Advising and Records
Van Dempsey, Advisor
Andrew Katayama, Advisor

Office of the Dean

Phone: 304-293-8703
Fax: 304-293-7565

832 Allen Hall
PO Box 6122
Morgantown, WV 26506-6122

Equal Opportunity/Affirmative Action Institution

Appendix C

PAGE #	PERIOD BEGINNING																		
	PERIOD ENDING																		
	1st Week					2nd Week					3rd Week					4th Week			
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T
SUBJECT <u>Geometry B</u>	65	14	25	41	20	30	35	60											
CLASS <u>5th Period</u>	70	13	45	41	30	24	40	42											
TIME	30	15	35	10	34	40	38	45	60										
1229	45	0	40	0	0	0	0	1											
3549	70	4	48	9	23	20	38	35	48										
742	70	15	45	35	40	20	45	66											
2290	65	0	25	5	28	20	30	45	54										
872	60	13	15	5	47	20	10	50	30										
2891	65	4	45	8	38	40	30	50	54										
1257	65	15	40	10	43	20	0	0	0										
1278	65	12	40	2	31	20	20	45	66										
3915	65	11	35	10	38	30	30	50	48										
1297	40	13	30	23	0	38	45	30											
2905	65	15	35	9	45	30	15	45	48										
2902	65	15	45	10	41	38	46	40	48										
2903	70	15	45	10	43	50	38	50	66										
2906	65	15	35	33	40	20	50	60											
2361	70	15	40	9	43	10	10	50	66										
1329	60	15	10	4	30	20	20	50	36										
1238	55	4	30	10	33	10	60	45	30										
2821	5	0	10	0	0	40	0	0	36										
234	40	15	45	10	43	30	18	50	36										
4121	20	14	35	10	43	10	24	50	30										
859	65	15	25	10	43	20	30	40	34										
485	65	15	40	9	43	38	10	50	54										
2287	(70)	(15)	(40)	(10)	(43)	(30)	(18)	(50)	(36)										
4731	(70)	(15)	(40)	(10)	(43)	(30)	(18)	(50)	(36)										
2976	(70)	(15)	(40)	(10)	(43)	(30)	(18)	(50)	(36)										
2913	(70)	(15)	(40)	(10)	(43)	(30)	(18)	(50)	(36)										
	QMI	WS	Q-F	WS	Q-F	Q-F	Q-F	Q-F	Q-F										
	9-2	9-2	9-2	9-2	9-2	9-2	9-2	9-2	9-2										
	4/20	4/20	4/20	4/20	4/20	4/20	4/20	4/20	4/20										

Appendix D

INSTRUCTIONS

Please place a check mark () in the appropriate blank spaces in response to each item below.

1. What are the last four digits of your social security number? _____
2. What is your student number? _____
3. Gender
 male
 female
4. I am:
 Caucasian
 Black
 Hispanic
 Other (specify _____)

CHILDREN'S SELF-EFFICACY SCALE

This questionnaire is designed to help us get a better understanding of the kinds of things that are difficult for students. Please indicate your opinions about each of the statements below by circling the appropriate number. Your answers will be kept strictly confidential and will not be identified by name. Please give your frank opinions.

Self-Efficacy in Enlisting Social Resources

How well can you get teachers to help you when you get stuck on schoolwork?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get another student to help you when you get stuck on schoolwork?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get adults to help you when you have social problems?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get a friend to help you when you have social problems?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Self-Efficacy for Academic Achievement

How well can you learn general mathematics?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn algebra?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn science?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn biology?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you learn reading and writing language skills?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you learn to use computers?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you learn a foreign language?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you learn social studies?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you learn English grammar?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

Self-Efficacy for Self-Regulated Learning

How well can you finish homework assignments by deadlines?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you study when there are other interesting things to do?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you concentrate on school subjects?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you take class notes of class instruction?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you use the library to get information for class assignments?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you plan your school work?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you organize your school work?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you remember information presented in class and textbooks?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you arrange a place to study without distractions?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you motivate yourself to do school work?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you participate in class discussions?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Self-Efficacy for Leisure Time Skills and Extracurricular Activities

How well can you learn sports skills?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn dance skills?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn music skills?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you do the kinds of things that are needed to work on the school newspaper?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you do the kinds of things needed to be a member of the school government?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you do the kinds of things needed to take part in school plays?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you do regular physical education activities?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you learn the skills needed for team sports (for example, basketball, volleyball, swimming, football, soccer)?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Self-Regulatory Efficacy

How well can you resist peer pressure to do things in school that can get you into trouble?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you stop yourself from skipping school when you feel bored or upset?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist peer pressure to smoke cigarettes?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist peer pressure to drink beer, wine or liquor?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist peer pressure to smoke marijuana?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist peer pressure to use pills (uppers, downers)?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist peer pressure to use crack?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you resist pressure to have sexual intercourse?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

How well can you control your temper?

1 2 3 4 5 6 7
 Not well at all Not too well Pretty well Very Well

Self-Efficacy to Meet Others' Expectations

How well can you live up to what your parents expect of you?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you live up to what your teachers expect of you?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you live up to what your peers expect of you?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you live up to what you expect of yourself?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Social Self-Efficacy

How well can you make and keep friends of the opposite sex?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you make and keep friends of the same sex?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you carry on conversations with others?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you work in a group?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Self-Assertive Efficacy

How well can you express your opinions when other classmates disagree with you?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you stand up for yourself when you feel you are being treated unfairly?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you deal with situations where others are annoying you or hurting your feelings?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you stand firm to someone who is asking you to do something unreasonable or inconvenient?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Self-Efficacy for Enlisting Parental and Community Support

How much can you get your parent(s) to help you with a problem?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get your brother(s) and sister(s) to help you with a problem?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get your parents to take part in school activities?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

How well can you get people outside the school to take an interest in your school
(for example, community groups, churches)?

1 2 3 4 5 6 7
Not well at all Not too well Pretty well Very Well

Appendix E

Re: Children's Self-efficacy Scale

Subject: Re: Children's Self-efficacy Scale

Date: Fri, 28 Jan 2000 09:55:51 -0800

From: Patricia Weaver

To: Sam Heastie <ed

Sam:

You have permission to use the Children's Self-Efficacy Scale.

Albert Bandura

At 02:33 PM 1/27/00 -0800, you wrote:

>Dear Dr. Bandura:

>

>I am a doctoral student in Educational Psychology at West Virginia
>University. I am requesting your permission to use the Children's
>Self-efficacy Scale to collect data for my dissertation. My study will
>examine the relationship among self-regulated learning, parent
>involvement, and homework. I believe you instrument will be of great
>service in collecting data in reference to these areas of interest.
>Please advise me of your decision.

>

>Thanks,

>Sam Heastie, M.A.

>ED.D Candidate at WVU

Professor Albert Bandura
David Starr Jordan Professor
of Social Science in Psychology
Department of Psychology

Appendix F

Parent Involvement Survey 1

Below is a survey that asks questions about parental involvement. For the purpose of this survey, parental involvement is defined as any form of verbal or non-verbal communication or assistance in reference to a child's out-of-school activities. Please answer the questions on this survey in reference to your child who is in the 9th grade at Grafton High School. Please complete the survey and return it in the self-addressed stamped envelope. The parent or guardian (one person) who has the most contact with the student in reference to school should complete this survey. Thanks for your help!

INSTRUCTIONS: place a check mark (✓) in one of the blank spaces in items 1 through 6 that best describes you.

1. Who is filling out this survey?

- parent*
 stepparent
 grandparent
 fosterparent
 guardian
 other (specify _____)

2. Is the person filling out this survey the one that has the most contact with the student in reference to school?

- yes*
 no

3. I am

- male*
 female

4. I am

- White*
 African American
 Asian American
 Other (specify _____)

5. Which item below best describes your schooling?

- graduated from high school*
 had two or more years of schooling beyond high school and received an associate's degree
 received a bachelor's degree
 received a master's degree
 received a doctorate degree
 other (please specify _____)

6. To what degree do you feel you have the necessary skills to help your child with their homework?

- I have very little skills*
 I have good skills
 I have very good skills
 I have excellent skills

Parent Involvement Survey 2

INSTRUCTIONS: circle one of the responses in items 7 through 16 that best describes your involvement.

7. How often do you have any kind of conversation with your child about school?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
8. How often does your child ask for your assistance with homework?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
9. How often do you assist your child with homework?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
10. How often do you assist your child with scheduling a time to complete homework?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
11. How often do you ask your child if they been assigned homework?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
12. How often do you check to see if your child has completed their homework?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
13. How often do you check homework after completion to see if it is correct?
never *rarely* *at least once per week* *at least twice per week* *every schoolday of the week*
14. How much time, each day, does your child spend on homework when it is assigned?
no time *less than 30 mins.* *30-60 mins.* *60-90 mins.* *more than 90 mins.*
15. When you do help your child with homework how much time do you spend?
not sure *less than 30 mins.* *30-60 mins.* *60-90 mins.* *more than 90 mins.*
16. How would you rate your involvement with your child's homework?
not involved *rarely involved* *moderately involved* *strongly involved* *very strongly involved*

Appendix G

Dear Parent:

Enclosed is a survey designed to gather information about parental involvement. The purpose of the survey is to better understand how parents are involved with their children's education.

I am asking that that you complete the survey and return it to me in the self-addressed stamped envelope by June 14th 2000. If you return a completed survey by the 14th you will receive a \$5.00 certificate for Wal-Mart. The funding for these certificates has been provided through a graduate research program at West Virginia University.

The information obtained as a result of your participation in this research will be kept as confidential as legally possible.

If you have questions about anything related to this survey please contact me at _____

Appendix H

Research Assistant Training Procedures

Script

1. **What to do** - after you are introduced to the class by the classroom teacher, say
2. **What to say** - “Good morning boys and girls, my name is _____. I am here today, with the permission of your school administrators, to collect data for a graduate student at West Virginia University. In just a few minutes I will give you a survey. When you receive it, please let it sit on your desk until I give further instructions.”
3. **What to do** – distribute one scale to each student
4. **What to say** – “Boys and girls, please note that this survey is not a test. There are no right or wrong answers. Please note also that there is no place for your name. This information will be kept confidential. As you begin, please be sure to put your student number on the survey. This information is only for the purpose of matching your survey with the one your parents will complete. The survey takes about 20 minutes to complete. When you have completed it, please turn it face-down on your desk and sit quietly until everyone is finished. What questions do you have?”
5. **What to do** – field questions. Do not answer specific questions about items on the survey. Take no more than one minute to answer questions.
6. **What to say** – “Please begin, please do not talk until everyone is finished.”
7. **What to do** – collect surveys when everyone is finished.
8. **What to say** – “Thank you boys and girls for participating in this research. Have a nice day.”