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The Impact Of Shared Inquiry Discussion On Teacher Expectations For Student Academic Performance

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THE IMPACT OF SHARED INQUIRY DISCUSSION ON TEACHER EXPECTATIONS FOR STUDENT ACADEMIC PERFORMANCE

BY

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Seton Hall University

2004
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An intellectual journey is begun with an idea, but made purposeful through
goals and discourse with others. The result of my journey, embodied in this work, was
lived through an intense and remarkable two years, and made possible by some
exceptional people for whom I hold a special place in my heart.

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Executive Ed.D program, whose fellowship during weekends and summers has left me
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To my supportive and long-suffering friends in the "real" world, I'm back!

What are we reading next?

This study could not have been done without the generosity and
professionalism of the wonderful teachers who participated. Each teacher voluntarily
participated exhibiting the qualities of reflection and sharing so typical of great
educators.

And, finally, to the professors, staff and guest lecturers at Seton Hall, thank
you, I enjoyed every moment. To my mentor Dr. Anthony Colella, I extend my
grateful appreciation for his unruffled manner and responsiveness through the requisite
problem-solving hurdles, always managing to say the little something that made the
difference.
DEDICATION

I dedicate this work to my family, to my husband, Torn, and my children, Ian, Eamon & Liam, and my parents, Yong and Darryl. Dylan once wrote, "Ah, but I was so much older then, I'm younger than that now." This is the gift you have given me through your love and support. I treasure it as I treasure you.
# TABLE OF CONTENTS

| LIST OF TABLES, | ................................................................. | vii |
| LIST OF FIGURES | ................................................................. | viii |
| I INTRODUCTION | ........................................................................ | 1 |
| History of Teacher Expectations | ................................................................. | 1 |
| Statement of the Problem | ........................................................................ | 8 |
| Purpose of the Study | ........................................................................ | 8 |
| Research Questions | ........................................................................ | 9 |
| Null Hypotheses | ........................................................................ | 9 |
| Definition of Terms | ........................................................................ | 10 |
| Significance of the Study | ........................................................................ | 12 |
| Importance of the Study | ........................................................................ | 13 |
| Limitations of the Study | ........................................................................ | 14 |
| Delimitations of the Study | ........................................................................ | 14 |
| II REVIEW OF THE RELATED LITERATURE | ................................................................. | 15 |
| Teacher Expectations: As Part of a System | ................................................................. | 15 |
| How Expectations Are Formed | ........................................................................ | 17 |
| Teacher Philosophy of Teaching and Learning | ................................................................. | 22 |
| Student Response Variables | ........................................................................ | 26 |
| Teacher Expectations and Traditional Classroom Instruction | ................................................................. | 30 |
| Shared Inquiry Discussion and Traditional Classroom Instruction | ................................................................. | 35 |
| Shared Inquiry Discussion and Teacher Expectations | ................................................................. | 39 |
| Summary | ........................................................................ | 43 |
| III METHODOLOGY | ........................................................................ | 44 |
| Introduction | ........................................................................ | 44 |
| Research Questions | ........................................................................ | 45 |
| Null Hypotheses | ........................................................................ | 45 |
| Subjects | ........................................................................ | 46 |
| Instrumentation | ........................................................................ | 46 |
| Academic Performance Rating Scale | ........................................................................ | 47 |
| Internal Consistency and Reliability of APRS | ........................................................................ | 49 |
| Data Collection | ........................................................................ | 50 |
| Data Analysis | ........................................................................ | 52 |
IV RESULTS OF THE INVESTIGATION ...........................................54
Introduction .................................................................54
Analysis of the Data .......................................................54
Descriptive Data Analysis ................................................54
Characteristics of the Study Sample ....................................54
Quantitative Data Analysis ..............................................59
Research Questions .......................................................59
Null Hypothesis ............................................................60
Findings Related to Research Questions ..............................60
Data Summary ..............................................................72

V SUMMARY, DISCUSSION AND RECOMMENDATIONS ............73
Summary of the Study .....................................................73
Findings and Discussion ..................................................75
Recommendations for Practice ...........................................81
Recommendations for Future Research ...............................82
References .....................................................................84

APPENDIXES

A Academic Performance Rating Scale ..................................96
B Histograms of Sample group
  B-1 Teacher Experience with SID ..................................100
  B-2 Teacher level of Expertise with SID ..........................100
  B-3 Teacher Years of Teaching Experience ......................101
  B-4 SID Model Used ...................................................101
  B-5 Student Ethnicity ..................................................102
  B-6 Student Socioeconomic Status ................................102
C Reliability and Validity Tables for APRS
  Academic Productivity Sub Scale ..................................104
  Academic Success Sub Scale .......................................105
  Impulse Control Sub Scale .........................................106
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Communication of Differential Expectations.</td>
<td>33</td>
</tr>
<tr>
<td>2. Teaching for Understanding: 10 Key Features.</td>
<td>35</td>
</tr>
<tr>
<td>3. Rosenthal's Four-Factor Theory and SID.</td>
<td>42</td>
</tr>
<tr>
<td>4. Teachers' Expertise Level with SID.</td>
<td>55</td>
</tr>
<tr>
<td>5. Teacher Experience with SID.</td>
<td>58</td>
</tr>
<tr>
<td>6. SID Model Used.</td>
<td>56</td>
</tr>
<tr>
<td>7. Sample Student Ethnicity.</td>
<td>56</td>
</tr>
<tr>
<td>8. Sample Student Socioeconomic Status.</td>
<td>57</td>
</tr>
<tr>
<td>9. Wilcoxon t-test for APRS Pre-Post.</td>
<td>64</td>
</tr>
<tr>
<td>10. Analysis of Variance (ANOVA) Comparing APRS and SID Models.</td>
<td>66</td>
</tr>
<tr>
<td>11. Analysis of Variance (ANOVA) Comparing APRS and Student Ethnicity.</td>
<td>67</td>
</tr>
<tr>
<td>12. Analysis of Variance (ANOVA) Comparing APRS and Student Socioeconomic Status.</td>
<td>68</td>
</tr>
<tr>
<td>13. Bonferroni Post Hoc Test Comparing APRS and Student Socioeconomic Status.</td>
<td>70</td>
</tr>
<tr>
<td>14. Spearman's RHO Correlation Matrix Comparing APRS and Teacher Experience and Teacher Years Using SID.</td>
<td>71</td>
</tr>
<tr>
<td>Figure</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>1. Limits To Growth Systems Archetype Diagram</td>
<td>16</td>
</tr>
<tr>
<td>2. Teacher Expectation Limits To Growth Diagram</td>
<td>16</td>
</tr>
<tr>
<td>3. Student Socioeconomic Status Distribution</td>
<td>57</td>
</tr>
<tr>
<td>4. Boxplot – Distribution Of Total APRS</td>
<td>61</td>
</tr>
<tr>
<td>5. Boxplot- Distribution Of Academic Success Sub Scale</td>
<td>62</td>
</tr>
<tr>
<td>6. Boxplot- Distribution Of Academic Productivity Sub Scale</td>
<td>63</td>
</tr>
<tr>
<td>7. Boxplot- Distribution Of SID Model Used</td>
<td>65</td>
</tr>
<tr>
<td>8. Boxplot – Distribution Academic Success Sub Scale Student SES</td>
<td>69</td>
</tr>
</tbody>
</table>
Chapter 1

INTRODUCTION

History of Teacher Expectations

Thirty years of research in examining teacher expectations has generated a wealth of information that reveals the complexity of classroom interactions as they relate to student academic performance. Initiated by the highly publicized "Pygmalion Study" by Rosenthal and Jacobson (1968), the focus of much of this research was to determine the possible links between failure of student academic performance and aspects of teacher behavior (Good & Brophy, 2000). While some teacher expectation research continues to focus on teachers and student achievement variables such as standardized test scores or classroom grades, a growing area of research strives to conceptualize the dynamics of the classroom and student academic performance as part of interrelated and mutually dependent systems (Good & Nichols, 2001; Green, 2002; Jussim, Smith, Madon & Palumbo, 1998; Saionen, Lehtinen & Olkinuora, 1998, Waxman & Padron, 1995) whereby measures of student academic performance must include student demonstration of growth in engagement in curriculum, motivation to participate in classroom activities as well as teacher assessment and standardized test scores.

Since classroom activities shape, to a great extent, the type and quality of interactions between teachers and students, more information is needed about how changes in classroom activities that move teachers from traditional classroom instruction to student-centered instruction might positively impact teacher-student interactions and subsequent student academic performance (Brophy, 1999; Padron, Waxman & Huang, 1999). It is equally
important to study how these changes in instructional methodology might affect teachers’
behaviors and expectations.

There is an abundance of research that establishes how teacher expectations are
formed. For example, research shows that teachers form impressions of their students derived
from permanent records, standardized test scores, existing knowledge of student siblings or
family, and colleagues (Bratessani, Weinstein & Marshall, 1984; Jussim, 1989; Jussim &
Eccles, 1992; Kubinski & Weinstein, 2001) from characteristics such as body build, gender,
race, ethnicity, given name and/or surname, attractiveness, dialect, and socioeconomic status
(Dusck & Joseph, 1985; Jones & Wheatley, 1990; Jussim, 1989; Rist, 1970; Trujillo, 1986); and
finally, through interpersonal interactions and classroom observations (Good & Nichcts,
2001; Salonen et al., 1998).

These impressions, interpreted through the teacher’s philosophy of teaching and learning,
form the basis of teacher expectations. “Teacher expectations are inferences the teachers
make about present and future academic achievement and general classroom behavior of
students” (Good & Brophy, 2000, p. 74)

Because teaching is inherently outcome-oriented teachers use this information to aid
them in teaching and managing the classroom environment. Consequently much research
has also been devoted to how teacher expectations are communicated (Bahad, 1990; Chaiken,
Sigler & Derlega, 1974; Good & Brophy, 2000; Rosenthal, 1973). The research shows that
teachers do treat students differently based on their expectations of them. It would seem to
make sense that because people are different, teachers’ responses to differences in children
should reflect that reality. However, it was found that, at times, teachers inappropriately
communicated either positive or negative expectations (Good & Brophy, 2000)
Rosenthal (1973) reviewed the research on mediators of teacher expectations and posited a four-factor theory. This four-factor theory was the way in which he believed teachers communicated positive expectations. Teachers promote positive expectations by: (a) climate: create a warmer social emotional climate; (b) feedback: give more feedback to preferred students; (c) output: give preferred students more opportunities to respond to questions; (d) input: teach more difficult material to preferred students.

Alternatively, negative expectations are communicated in the following ways (Good & Brophy, 2000, p. 85): (a) waiting less time for student answers; (b) giving answers, or calling on someone else rather than helping over the rough spots; (c) rewarding inappropriate behavior or incorrect answers; (d) criticizing more often for failure; (e) praising less frequently than highs for success; (f) failing to give feedback to the public responses of students; (g) calling on low expectation students less often to respond to questions, even when they volunteer; (h) seating low expectation students farther away from the teacher; (i) demanding less work, effort, and appropriate responses from; (j) interacting with privately rather than publicly, monitoring their activities more closely; (k) no benefit of the doubt in borderline cases when it comes to grading or giving assignments; (l) giving briefer and less informative feedback to questions; (m) differential administration or grading of tests or assignments; (n) less friendly interactions, less smiling and other nonverbal indicators of support; (o) less eye contact; (p) less use of effective, but time-consuming instructional methods; (q) less acceptance of ideas; (r) impoverished curriculum (limited and repetitive content).

In the planning and implementation of classroom instruction, teachers, often unconsciously, use language and subtle nuances such as, tone of voice, facial expression,
body posture, and other types of body language to communicate both positive and negative expectations (Babad, 1990; Chaiken, Sigler & Derlega, 1974).

In response to the growing concern about the possible deleterious impact of communicating non-productive expectations, programs such as TESA (Teacher Expectations and Student Achievement) were created and studied (Gottfredson, Birdseye, Gottfredson & Marcinak, 1995; Keman, Kimball, & Martin, 1980). TESA identified 15 positive expectancy behaviors that were used with high achievers. These behaviors were classified into three strands: response opportunities, feedback, and personal regard. These three strands involved specific behaviors, such as, affirmation, praise, listening, accepting feelings, proximity, personal interest, and compliments. Through extended staff development over a period of 5 months, teachers discussed each behavior, observed practice videotapes, and conducted peer observations. Initial studies by the program developers showed dramatic gains in one subject area for low achievers. However follow-up studies did not replicate these results. Gottfredson et al. (1995) found no such gains in a study they did with first, third and fifth grade classes in two schools. In fact, they found negative program effects in one comparison group. These results cast doubt on the ability of using metacognitive training alone to enhance communication of appropriate teacher expectations.

While positive expectancy behaviors seem valid and critical for good teaching, the lack of positive results in Gottfredson et al. (1995) may be due to a number of factors. Green (2002) proposes that expectancy behaviors are part of a “social text.” The social text, is what is conveyed to students by the teacher as what is important to do and learn in the classroom. Derived from expectancy-value theory (Eccles, 2002; Green 2002), teachers need to create a positive climate (expectancy behaviors), but then must explicitly verbalize the usefulness and
value of the learning tasks. According to expectancy-value theory, the amount of effort students give to a task is determined by and how much he/she expects to be successful and how much he/she thinks the task is important.

Students have been found to be well aware of superficial attempts on the part of teachers to convey expectations. Studies have highlighted the fact that while teachers’ expectations impact students, student responses can mediate this impact and/or, in turn, impact teacher’s expectations (Good & Nichols, 2001). Babad and Taylor (1992) conducted a study where fourth grade students were shown silent videotaped lessons, voluntarily submitted by teachers. These students could identify high and low expectation students by watching the teacher’s expressions and body language. In contrast the teachers in this study reported giving equal amounts of expectancy behaviors. Children have been found to be quite sophisticated observers in detecting superficial or insincere attempts on the part of the teacher to express high expectations (Braitesari et al., 1984).

Possibly, an awareness of good teacher behaviors does not translate to a concurrent change in teacher expectations because there are strong fundamental beliefs that have not been addressed. Much like the theory of “mental models” proposed by Senge (1990) that determine how we view the world, Lee and Porter (1990) proposed the notion of “bounded rationality” with regards to teacher expectations. Simply, teachers, in an effort to understand the complexity of the classroom environment, construct a simplified mental model of the situation in order to make sense of it, and then act in accordance with the model once constructed. They studied six middle school science classes and three teachers. Their results showed a bias effect, that teachers tended to make broad generalizations about the class as a whole and treated the class in light of either their positive or negative expectations.
Lee and Porter (1990) proposed that the origin of teacher expectations needed to be investigated in relation to "How accurate teachers' expectations are with respect to students' characteristics and how reality based are teachers' expectations with respect to students' needs" (p. 168). Finally, they assert that because the classroom is a social environment, perception and social cognition variables such as schemata, belief systems or implicit theories should be addressed in examining teacher expectations.

Implicit theories (Dweck, Chiu & Hong, 1995; Dweck, 2000) are the personality qualities that structure the way a person understands and reacts to human actions and outcomes. Implicit theories of human attributes contribute to a person's expectations. If they are "entity oriented" then they believe that human intelligence is fixed, if they are "incrementally oriented" they believe that behavior is psychologically and behaviorally mediated. In light of the work of Brophy (1998), Dweck et al. (1995), Lee and Porter (1990) and Green (2002), as teachers attempted to change their expectations, such as, through TESA training, there was not enough evidence for teachers to internalize these changes due to powerful underlying beliefs, or mental models.

Consequently, other factors need to be investigated in this paradigm, such as, how the various aspects of teacher expectations can be mediated by teaching methods, classroom dynamics and classroom activities.

The current concept of teacher expectations implies a number of cognitive processes acting in concert, the formation of the teacher's attitude towards a student, a forecast concerning future performance of that student, and an underlying mechanism - the teacher's philosophy of teaching and learning (Chow, 1988). But most importantly, these cognitive
processes result in teachers making decisions about students as "academic learners and social beings" (Good & Nichols, 2001).

In "My Pedagogic Creed," Dewey (1897) stated,

I believe that the school is primarily a social institution.

Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social end. I believe that education, therefore, is a process of living and not a preparation for future living. I believe that the school must represent present life - life as real and vital to the child as that which he carries on in the home, in the neighborhood, or on the play-ground (p.78).

What Dewey espoused over 100 years ago is vital today. Current research in teachers' expectations is starting to incorporate student response variables within the larger context of a systems theory framework (Pianta & Walsh, 1998; Samaroff, Seifer, Baldwin & Baldwin, 1993; Senge, 1990). The systems view looks at multiple sub-systems that interact within the classroom that impact teachers and students, such as, (a) motivation and goal orientation of the child, (b) teacher & student efficacy, (c) the social groups including the classroom, the family and cultural context. For both teacher and student the classroom experiences can shape expectations or mental models. The quality of the teacher-student relationship as played out through mutual expectations can be a source of support or risk that has been linked to long-term achievement and developmental outcomes (Baker, 1999; Birch & Ladd, 1997, Gill & Reynolds, 2000, Montague & Rinaldi, 2001; Pianta & Walsh, 1998;

Good and Nichols (2001) state that "teachers' conceptions of students both as learners and social beings and students' mediation of these teachers' beliefs and behavior are more powerful ways to conceptualize the impact of teacher expectations" (p. 114). Educational interventions should take into account a nexus of theoretical constructs.

Statement of the Problem

Teachers' initial assumptions and beliefs about students as academic learners and social beings frame their expectations for students' academic performance (Good & Nichols, 2001). Traditional classroom instruction and interactions may reinforce static expectations or maintain inaccurate expectations that impact students' academic performance (Ferguson, 1998a; Jones & Gerig, 1994; Miller, 2007; Walker, 2003). Classroom instruction is needed so that teachers' expectations of students stay fluid, consistent with the changing nature of students' potential.

Purpose of the Study

The purpose of this study was to investigate the impact of teacher use of Shared Inquiry Discussion, an instructional process, on teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale) and demographic data.

This study will utilize quantitative methodologies. There are three research questions and three null hypotheses following that will yield data relevant to the quantitative portion of this study.
Research Questions

1. How does use of Shared Inquiry Discussion impact teacher expectations for student academic performance as measured by the A.P.R.S. (Academic Performance Rating Scale)?

2. How does Shared Inquiry Discussion model (Great Books, Socratic Seminar or Combined) impact teacher expectations for student academic performance as measured by the APRS?

3. How do student and teacher demographic factors impact teacher expectations for teachers who use Shared Inquiry Discussion?

Null Hypotheses

H01: There will be no change in teacher expectations for student academic performance before and after use of any of the Shared Inquiry Discussion (SID) models.

H02: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with the type of SID model used.

H03: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with student and teacher demographic factors.

1 as measured by three scales: 1) Academic motives, 2) Impulse control, and 3) Academic productivity (see Instrumentation Section in Chapter II for a description of these measures)

2 SID Models: 1) KIB, 2) SS, 3) Tosh, or, 4) Combination (see Definition of Terms for a description of these models)

3 Student: 1) Ethnicity, and, 2) socio-economic status.

Teacher: 1) Years of teaching experience, 2) Years of experience using the SID, 3) SID expertise (see Chapter III Methodology for a description of these measures)
Definition of Terms

*Differential expectations.* Specific expectations held for individual students. Consciously or unconsciously, teachers often behave differently toward students based on the beliefs and assumptions they have about them that can be communicated positively or negatively (Brophy & Good, 1970; Good & Weinstein, 1986; Rosenthal, 1973).

*Expectancy-value theory.* A theoretical framework in the psychology of motivation where teachers can influence students' motivation through expectancy behaviors and verbal motivational communications. The time and effort a student will give depends upon if he/she expects to succeed at the task and if he/she values the task (Green, 2002).

*Expectation theory.* The model developed by Brophy and Good (2000) that discusses the formation and communication of teacher expectations.

*Great books discussion.* The discussion originally begun as seminar courses offered at the University of Chicago on the compilation of the great works of literature by Mortimer Adler, then formed into an independent foundation in 1947. The Great Books foundation run by Robert Hutchins (President of the University of Chicago) and Mortimer Adler began training and running seminars for adults, then for people of all ages using pre-selected and field-tested series of texts containing literature and art materials.

*Implicit theories.* Based on the work of Dweck (1991; Dweck et al., 1995; Dweck, 2000) implicit theories are two different underlying assumptions concerning personality attributes that set up a framework for analyzing and interpreting human actions. These assumptions are beliefs about intelligence as a fixed or malleable trait. People who believe that intelligence is fixed *entity theory* believe that intelligence can't be changed. People who
believe that intelligence is malleable believe that a person can become more intelligent through their efforts incremental theory.

Shared inquiry discussion. Shared Inquiry Discussion is a facilitated discussion derived from the work of Adler (1982; 1984) that requires participants to collaborate in an understanding of texts that integrates factual, interpretive, and evaluative thinking. Through dialog, in a seminar format, students examine the big ideas inherent in a text and offer textual evidence to support thinking. The teacher facilitates the discussion rather than supplying answers. The text can be a piece of writing, art or a diagram that is applicable across subject areas. There are three current formalized forms of Shared Inquiry Discussion, which have the same central components: the text, the circle of participants, the opening and medial questions, and a facilitator.

Self-fulfilling prophecy. An originally erroneous expectation leads to behavior that causes the expectation to become true (Merton, 1948).

Sustained expectation. Teachers expect students to sustain previously developed patterns, to the point that teachers take these patterns for granted and fail to see and capitalize on change in students’ potential (Good & Brophy, 2000).

Socratic seminar. Launched as one of the three parts of the Paideia Proposal, an educational reform manifesto, written in 1982 by Mortimer Adler, and similar to the practice of Great Books seminars. The purpose of a Socratic Seminar is to engage students’ understanding of the central ideas of a text. Adler (1982) felt that this process “engages the mind in a study of individual works of ment accompanied by a discussion of the ideas, the
values, and the forms embodied in such products of human art" (p.29), as well as make more explicit personal beliefs concerning the topic of discussion.

**Student academic performance.** Growth of engagement in the curriculum as measured by teacher perception of student participation, classroom performance, and motivation to participate in classroom activities measured by the results of scores on the APRS (Academic Performance Rating Scale).

**Teacher expectations.** Teacher expectations are inferences that teachers make about the future behavior or academic achievement of their students, based on what they know about these students now (Good & Brophy, 2000), and that are formed and communicated in specific ways (Brophy & Good, 1970; Good & Brophy, 2000) and interpreted through a philosophy of teaching and learning. For the purposes of this study this term encompasses both the overall expectations the teacher has for the class and individual students within the class.

**Touchstones discussion project.** A method of reading and discussion that seeks to encourage cooperative learning as well as to exercise such key individual skills as critical thinking, respect for others, personal responsibility, and self-discipline established by Comber and Zaiderman (1994).

**Significance of the Study**

This study examined the relationship between the cognitive processes related to teacher expectations and the types of instructional practices that might serve to mitigate fixed or erroneous teacher expectations, keeping expectations current and flexible. The literature in this field up to this point shows the effect and relative stability of teacher expectations for student academic performance (Good & Brophy, 2000). Classrooms today are more
ethnically, socio-economically, and racially diverse (Marx, 2000), while curriculum and instruction continue to reflect the needs of an ever smaller, White and middle class proportion of students. Given the continuing growing diversity of students and relative ethnic uniformity of the teaching force, the impact of teachers’ expectations has become more critical to examine. Many studies have documented efforts in programs such as TESA (Gottfredson et al. 1995; Penman, 1982) to change teachers’ negative expectations of students metacognitively by making teachers aware of bias and stereotyping with mixed results. However, there is little research that shows how teachers can keep their expectations fluid (Ferguson, 1998a), nor are there many studies that investigate different instructional strategies with regard to teacher expectations. The context within which teacher expectations operate is very important and therefore examining how and when teacher expectations are more or less important is critical (Weinstein & Mckown 1998). This study attempts to further knowledge in the field concerning instructional methods and how these methods may impact teacher expectations.

Importance of the Study

What can be uncovered from this study would be important to educators. Providing teachers with evidence through classroom interaction and pedagogical technique that continually challenges teachers’ differential expectations of students’ potential would change expectations and create the possibility for higher academic performance for all students. This study would be helpful to administrators and curriculum designers seeking best practices to raise academic performance for all students. This study would be important for students at risk because Shared Inquiry Discussion might be helpful in bridging the needs of these students to be engaged in the curriculum and find a voice within the classroom.
Limitations of the study

1. The Impulse Control sub scale achieved a internal correlation coefficient of .54 using the actual data therefore the utility of this scale was severely compromised and unusable in this study.

2. Student achievement was not used as a variable in this study that may limit any strong causal assertions relating SID to student achievement.

3. The level of competence with Shared Inquiry Discussion may affect the way in which it is implemented and, therefore, SID impact may have little effect on teacher expectations.

4. Teachers who have practiced Shared Inquiry for a number of years, and are competent practitioners, may have successfully mediated negative teacher expectations by virtue of the training.

5. Due to lack of available subjects the sample size did not include teachers who used Touchstone Discussion Project or the Shared Inquiry Discussion models.

6. The study was conducted over a 7-10 week time period. This may not have provided sufficient time for Shared Inquiry Discussion to have an impact on teacher expectations.

7. Use of text was not controlled; therefore opportunities for teachers to observe student behavior may be mitigated by poor quality text.

Delimitations of the Study

This study did not seek to examine whether student academic achievement was impacted by use of Shared Inquiry Discussion. Teacher expectations and student achievement have been linked in several studies (Jussim, Eccles & Madon, 1996, Kenealy & Frude, 1991) and Shared Inquiry Discussion and student achievements have been linked in several studies (Gursky, 1998).
Chapter II
REVIEW OF THE LITERATURE

The purpose of this study was to investigate the impact of teacher use of Shared Inquiry Discussion, an instructional process, on teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale) and demographic data.

A review of the related literature is presented in this chapter. The review is organized (a) to illustrate various aspects of teacher expectations and the factors that mediate teacher expectations and how they impact student academic performance; (b) to describe how traditional classroom instruction maintains static teachers’ expectations; (c) to discuss Shared Inquiry Discussion as a promising classroom instruction; (d) to investigate how Shared Inquiry Discussion may encourage fluid teachers’ expectations.

Teacher Expectations as Part of a System

Chapter I discussed the movement away from looking at teacher expectations as a one-way teacher to student process, but rather as part of complex interrelated systems. This chapter will seek to examine the literature regarding relevant parts of these systems as they relate to teacher expectations and student academic performance.

Teacher expectations have found to be a powerful force in student classroom performance because, “Teachers decide what students are assigned to learn and judge how well they do” (Good & Nichols, 2001, p. 113). Based on expectations, teachers decide what curriculum materials to use, how much or little structure or choice to provide, the extent of student participation in instruction, and the appropriate emotional climate within the
classroom (Jones & Cergo, 1994). The way expectations are formed, the way they are communicated and the way students respond are three critical aspects within the systems view of the classroom. Senge (1990) suggested creating a diagram to understand a systems archetype based on the model shown in Figure 1.

![Diagram showing Growing Action, Condition, and Slowing Action with Limiting Condition](image1)

**Figure 1.** Limits to growth system archetype diagram.

Figure 2 depicts the limits to growth diagram of the teacher expectation paradigm used in this study (Senge, 1990, p. 103)

![Diagram showing Teacher Expectations, Teacher Impressions, Student Data, and Self-fulfilling Prophecy Effects](image2)

**Figure 2.** Teacher Expectations Limits to Growth Diagram
Senge suggested that, "Once you’ve mapped out your situation, look for leverage. It won’t involve pushing harder; that will just make the resistance stronger. More likely, it will require weakening or removing the limiting condition" (p. 104).

Therefore, in Figure 1 the center box (Student Academic Performance) represents the condition. The box on the left (Classroom Instruction) represents the growing action that is reinforced by the factors in the loop. The loop on the left is the reinforcing loop that left on its own will continuously reinforce itself. The loop on the right is the balancing loop that shows the factors creating resisting forces that keep the condition from continually improving. The box on the right (Teacher Expectations) represents the slowing action that interacts with the factors within the loop that creates a balancing process and keeps the condition from continually improving (Senge, 1995, p. 107). According to the teacher expectations archetype diagram shown earlier, Senge suggests removing or weakening the limiting condition (teacher expectations) would be the way to gain leverage and change the condition (student academic performance).

How Expectations are Formed

Understanding the way expectations are formed is an important aspect of the balancing loop because it is during this formation time where opportunities may be investigated to permit growth and keep expectations current. Expectations, once formed, tend to be more stable than not (Lee & Porter, 1990). What is known currently is that formation of expectations can be either induced or naturally occurring. Induced expectations are referred to as self-fulfilling prophecies based on the idea developed by Merton (1948) and the Pygmalion study by Rosenthal and Jacobson (1968). In this study, teachers were made to believe that some of their students would experience an academic growth spurt during the
coming year. These students were actually selected randomly. At the end of the year, the so-called “spurters,” especially those in the first and second grades, demonstrated greater gains in IQ than did the other children. Rosenthal and Jacobson believed that the false information induced expectations in the teachers which in turn caused the teachers to treat these students differently thus explaining the higher achievement gains for those students. This led to considerable debate among researchers concerning the possibility of perception creating social reality in schools and the nature of these self-fulfilling prophecies. Such induced expectations (self-fulfilling prophecies) is the most simplistic form operate in the following way: teachers form certain expectations of students, then teachers behave differently with students based on these expectations. Students respond by internalizing teachers’ expectations and behaving consistently with expectations, teachers expectations are reinforced and these four patterns repeat creating a cycle of self-fulfilling prophecy.

Since the publication of the Pygmalion study by Rosenthal and Jacobson (1968), hundreds of studies were done both refuting and demonstrating self-fulfilling prophecy effects. Rosenthal and Rubin (1978), in response to this intense debate, developed a statistical technique called meta-analysis in which they summarized 345 of these studies and statistically demonstrated the existence and magnitude of self-fulfilling prophecy effects under experimental conditions.

While self-fulfilling prophecy effects were documented under experimental conditions, the magnitude of Rosenthal and Jacobson’s original results have not been replicated in regular school settings because it has been found that the majority of teachers’ expectations are not induced, but naturally-occurring (Jussim, 1986; Jussim & Eccles, 1995; Rosenthal & Rubin, 1978). Teachers form expectations from a number of different sources so
that self-fulfilling prophecy effects typically account for only between 10 – 30% of teacher expectations (Jussim & Eccles, 1992; Kolb & Jussim, 1994; Madon, Jussim & Eccles, 1997).

One important caveat is that while teachers are not likely to be induced to believe false information about students is contrast to other information, self-fulfilling prophecy effects were found to be powerful in two ways; (a) when students believed that teachers treated high and low achieving students differently, and (b) among African-American students and those from lower socio-economic backgrounds (Madon, Jussim & Eccles, 1992, 1997). So, for the population as a whole, self-fulfilling prophecy effects may account for between 10-30% of the impact of teacher expectations on student classroom performance, but this number might be much higher for certain segments of the population.

In addition, research also shows that the mechanism of self-fulfilling prophecy is powerful because both induced and naturally formed teacher expectations, once formed, can become self-fulfilling (Good & Brophy, 2009).

On the other hand, naturally occurring expectations are formed through "perceptual biases" or "accuracy" (Jussim 1989, Jussim & Eccles, 1992). "The perceptual biases occur, when teachers perceive, evaluate or remember their students' behaviors in ways that are consistent with their erroneous beliefs. Much like a stereotype, a perceptual bias occurs when teachers base evaluations of students on their own expectations rather than on student performance" (Kolb & Jussim, 1994, p. 27). Teachers may formulate impressions of students based on socio-economic status (Rist, 1970), educational labels (Dusek & Joseph, 1985), classroom behavior and effort (Babad, 1980) that influence grades assigned, but not standardized test scores (Williams, 1976). This is important for student classroom performance because this may, "cause some teachers to be more likely to see what they
expect and less likely to notice the unexpected" (Good & Nichols, 2001, p. 113). Moreover, the impact may be quite powerful in lower grades because at this point in the students' school career the teacher's behavior is formative, "First-grade teachers do more than create reading groups, they also decide who will greet visitors on behalf of the class. These are not insignificant events in the lives of children as these decisions convey status and respect" (Good & Nichols, 2001, p. 114).

When teachers glean information from factors such as ethnicity, socioeconomic status, and previous family contact and interpret this information through rigid belief systems about teaching and learning perceptual biases occur, "They represent failures to accurately assess performance" (Kolb & Jussim, 1994, p. 27).

Accuracy, as it relates to teacher expectations in the classroom, is based on teachers accurately predicting student performance without influencing it (Kolb & Jussim, 1994). Jussim, Smith, Madon and Polumbo (1998) identify two types of accuracy: Impression accuracy refers to expectations derived from grades, standardized test scores, in class performance and student motivation; Predictive accuracy refers to the teacher prediction of student achievement being equal to later student achievement on standardized tests basically when grades closely align to standardized tests. Two hypotheses were tested by Jussim and Eccles in 1989 and 1992: (a) Teachers’ expectations early in the year are based on students’ previous achievement and motivation; and (b) Teachers’ expectations, students’ motivation, and students’ previous achievement influence on students’ subsequent achievement. This study used a sample of over 200 teachers and 3,000 sixth and seventh grade students. Student grades and standardized test scores were used as measures of student achievement. The results indicated that teacher perceptions early in the year predicted student grades more
than they predicted standardized test scores. Prior achievement and motivation were controlled for to rule out possible impression accuracy. Statistical analysis showed that between 70 and 80% of the path coefficients relating teacher perceptions to standardized test scores represented predictive validity (Jussim, 1986). Based on the assumption that standardized tests are in general predictive of student achievement, this study concluded that between 70 and 80% of teachers' expectations were primarily accurate, and the remaining 20 and 30% are influenced by perceptual bias or self-fulfilling prophecy effects.

However, in a study done by Jussim, Eccles and Madon (1996), the difference in achievement outcomes for African-American and low socio-economic students, predicted by the highest and lowest teacher expectations, were as high as 50 percentile points. High expectations and positive expectancy behaviors on the part of teachers have an impact on all students, but may have a significant impact on academic performance for some groups of students.

Because the accuracy of teacher expectations is based on an assumption of the validity of standardized tests, there are however, some important mitigating factors to consider when applying accuracy to teachers expectations of student academic performance. Standardized testing begins in many educational settings in second grade and results of these tests are the basis from which accurate expectations are derived. In contrast, many current studies hypothesize that these prior years of school experiences in conjunction with students' motivational orientation have already set the stage for students' performance on these tests which current research shows is may be an inaccurate measure of student potential (Kolb & Jussim, 1994; Weinstein & McKown, 1998).
Teacher Philosophy of Teaching and Learning

The teacher’s beliefs about how people learn and how to teach affect the way they view classroom instruction. There are many constructs of teacher belief systems that contribute to the present study. Teachers who believe that intelligence is stable and unchanging would most likely rank subjects into categories such as gifted, average, and retarded (Hilliard, 1988), form rigid expectations and be resistant to changing them, “when they believe that the basis for their expectations is some stable factor” (Kolb & Jussim, 1994, p. 28).

Good and Brophy (2000) suggested that teachers can be ranked in their expectation formation tendency as proactive, reactive, or over-reactive. As a generalization, proactive teachers form high expectations and hold them consistently, reactive teachers hold expectations lightly and modify them with new information and over-reactive teachers tend to hold rigid differential expectations. For all teachers, there is an underlying belief system that guides and maintains expectations.

Dweck, Chiu and Hong (1995) theorized that a belief system is a “core assumption that defines the individual’s reality and imparts meaning to events” (p. 268). She calls these core assumptions “implicit theories.” Implicit theories do not determine peoples’ behavior, but create a framework from which information received is filtered through. Within this construct, people can be placed on a continuum where they are more “entity oriented” or “incrementally oriented” with reference to human attributes such as intelligence. Entity-oriented individuals see outcomes and actions relative to fixed traits, that is, intelligence is a fixed trait therefore failing a test is due to stupidity. Whereas, incrementally oriented individuals see outcomes and actions as dynamic and changeable, for example, failing a test
is due to lack of effort or strategy (p. 267). In six separate studies of over 630 subjects, Dweck et al. (1995) found an internal reliability of between .94 and .98 for an implicit theory of intelligence. A multiple regression analysis of the data showed that the implicit person theory was significantly predicted by the intelligence theory (beta = .32, p = .0001). Dweck et al. (1995) then tested this construct in a number of contiguous social-moral cognition domains and found that individuals who believe that attributes are fixed traits are more likely to make general trait judgments of others from initial information about their behavior. In addition, entity-oriented people were more likely to believe in punishment for negative character inferences. In one study by Dweck et al. (1995) participants were given a hypothetical scenario in which students did not fulfill classroom duties assigned by the teacher. Then, these participants were asked what they would do. Entity-oriented participants recommended punishment, whereas, incrementally oriented participants were more likely to talk to students, try to understand what happened, and provide encouragement for them to complete the task.

Fortunately, these implicit theories are not fixed personality dispositions, but rather stable personality qualities that are malleable (Bergen, 1991) as cited in Dweck et al., 1995. Dweck (2000) was successful in inducing participants to adopt either entity or incremental orientation by reading compelling evidence for either theory. When participants were presented with an article in which they were asked to predict the likelihood of trait consistent behavior, those who were led to believe in entity theory did ascribe behaviors that were consistent with that orientation.

A similar finding is highlighted in the work of Stevenson and Stigler (1992) shows the concern when an emphasis on ability rather than effort is placed in assessing the
academic potential of students. Because making a mistake may be construed as failure, if you believe in innate ability, "teachers go to great lengths to prevent failure" (p. 103). They highlight in a study of first grade reading groups done by Allington (1984), that teachers would rather give easier tasks to students of perceived lower ability than letting them fail. Teachers in this study gave high groups over 1100 words to read and in contrast gave low groups only 400 words to read. They state that, "The pervasive emphasis on innate ability lowers expectations about what can be accomplished through hard work" (p. 112).

Walberg (1988, as cited in Bamburg, 1994), found that a "preoccupation with innate ability has resulted in a belief tantamount to 'educational predestination', that is, innate ability – rather than effort, the amount of quality instruction or parental involvement, is believed to be the key to academic success" (p.7). There would be little effect on academic performance if your ability represented by IQ, or other similar data, didn't support it. Ferguson (1988b) reported a 1984 survey that questioned 1,020 university professors and researchers on intelligence. He found that 46% felt that differences in intelligence were genetically related.

When teachers operate under the belief that there are programmed innate abilities, manifestations in the classroom include, the notion that, "success on basic skills measures (decoding and arithmetic operations) becomes a hurdle that must be overcome before the student receives instruction in comprehension" (Means, Clelemor, & Knapp, 1991, p.1) or, there is differential, inappropriate goal setting for students based on their perceived abilities (Sedlak, Wheeler, Pullin, & Cusick (1986).

Basic skills instruction can be tedious and, over time, create boredom, resulting in a condition where teachers need to exert more and more control to keep students engaged and
focused. The underlying belief in the futility of the effort reinforces continued rigid instruction and group labeling for low-achieving students. Therefore, in an effort to preserve feelings of efficacy, “teachers may limit their interactions with students who are perceived to be low in ability in order to maintain their feelings of control” (Bamburg, 1994, p. 8).

On the other hand, teachers who hold more flexible beliefs about intelligence, ability, and skills mastery fore expectations that allow them to adjust their instructional approaches as changes in students’ performance occur (Leonardi & Gialamas, 2002; McDonald, Pressley, & Hampton, 1998). In a study of 12 first, third, and fifth grade classrooms Marshall and Weinstein (1986) found that neither the organization of the class (homogeneous or heterogeneous) nor the high percentage of reliance on whole class instruction was “less salient where the underlying messages conveyed are supportive of individual differences and students’ ability to learn” (p. 432). This research pointed to a dichotomy between teachers who held unidimensional and multidimensional beliefs about student ability that communicate negative differential expectations to students.

Ladson-Billings (1994) categorized these two philosophical orientations as “culturally relevant” or “assimilationist.” A culturally relevant orientation results in beliefs that all students can succeed, teaching as pulling knowledge out, and seeing oneself as part of the community. Whereas, an assimilationist orientation sees teaching as putting knowledge into students, assumes that teachers are doing a job, the teacher is an individual and encourages achievement as a means to escape the community, that failure is inevitable, and further, homogenizes students into an “American” identity.

A philosophy of teaching and learning is the lens by which teachers see their professional role and construct mental models of their classes. The more complex and fluid
mental models were found in teachers with generally higher expectations and regardless of which case, "Once simplified models were constructed, teachers behaved consistently with respect to their models" (Lee & Forter, 1990, p. 155).

Student Response Variables

Research on social cognition has shown the increasing impact of variables such as motivation and engagement, goal orientation, and social competence rather than innate ability, as powerful moderators on student academic performance and on teacher expectations. One of the reasons is because students are aware that teachers hold different expectations for low and high achievers across different educational settings (Brantesani, et al., 1984; Good & Nichols, 2001; Weinstein & Middletast, 1979); in tracked classrooms (Ferguson, 1998a); on the basis of gender in math and reading (Jones & Wheatley, 1996; Leinhardt, Seewald, & Engel, 1979; Palardy, 1969); and by group placement within a heterogeneous class (Good & Nichols, 2001). In a study that measured teacher and student perceptions of non-verbal communication of expectations, Bahad (1990) found that students perceived that high expectancy students received more emotional support than did low-expectancy students.

While students may be aware of differential expectations, not all are equally impacted by communication of these differential expectations. Young or more teacher-dependent students may be more affected by teacher expectation effects (Weinstein & McKown, 1998) and/or, students from certain social groups, such as African American or low socio-economic, may react more to teacher expectations (Baker, 1999; Jussim, Eccles, & Madon, 1996). In a study of teacher-student interactions, Baker (1999), found that "the social context of the classroom influences students appraisals of school as a likeable and satisfying
environment by as early as third grade” (p. 65). Baker (1999) advocates that successful school experiences for at-risk students, “may involve altering the classroom or learning environment rather than attempting to alter the student” (p. 65).

Increasingly, social cognition variables, such as motivation, are being integrated into educational constructs to understand student responses as well as other aspects of teacher expectation research. In a construct of student motivation, Salonen et al. (1998) found that “student’s initial orientation” as characterized by task-orientation, ego-defensiveness, or social dependence, played critical roles in acculturation in the classroom and influenced a reciprocity in teacher expectations and student academic performance. Student initial orientations are not personality traits, they are a set of coping strategies that tend to be manifested when interacting with certain situational cases. Students who begin their school career with a strong task-orientation (tendency to master challenging aspects of the environment) are the least affected by teachers’ expectations because while these students seek adult feedback for the intellectual task at hand, they do not rely on this feedback for emotional support. Socially dependent students who seek approval and affiliation with authority will watch and adjust to the teachers’ expectations in order to receive social approval. Ego-defensively oriented students perceive classroom challenges as threatening and avoid them due to anticipated negative social consequences.

The theory of student motivation constructed by Salonen et al. (1998) can be compared to the findings of Cain and Dweck (1996), on the achievement motivational patterns of children. Students who are “socially dependent” or “ego defensive” can be likened to a learned helplessness pattern of negative self-attributions, lowered expectancies, decreased persistence, and negative affect. Helpless students, Cain and Dweck (1996) found,
tend to view setbacks to achievement as a stable characteristic much like an entity orientation. They may interpret failure or teacher feedback as a personal indictment. On the other hand, students who are task oriented can be likened to an incremental orientation where setbacks are not attributed to innate ability, but to effort or strategy and therefore their responses are not as dependent upon teacher feedback.

Student motivation may lead to the amount of engagement that is displayed in classroom situations. Skinner and Belmont (1993) define engagement as the following:

The intensity and emotional quality of children’s involvement in initiating and carrying out learning activities. Children who are engaged show sustained behavioral involvement in learning activities accompanied by a positive emotional tone. They select tasks at the border of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of learning tasks; they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest. The opposite of engagement is disaffection. Disaffected children are passive, do not try hard, and give up easily in the face of challenges. [They can be bored, depressed, anxious, or even angry about their presence in the classroom; they can be withdrawn from learning opportunities or even rebellious towards teachers and classmates (p. 572).

Miller (2003), in a study comparing classes that offered low challenge for low students and classes that offered high challenge tasks for low students, found that average
and low achieving students when given high challenge academic tasks showed the greatest achievement gains. Students in the high challenge classrooms reported that "You get to tell people about how you felt and what you did and they will know a little bit more about you" (p. 50). The low achieving students in the low challenge classes showed significantly less engagement in classroom instruction and "expressed a work avoidant response for class work" (p. 50).

For students, the first few years in school and the instructional practices of teachers may institute certain skills, behaviors and attitudes that are crucial for success in later standardized test achievement. Hanze and Pianta (2001) found that the quality of teacher-child relationships in the primary grades forecast later problems and the extent that children were able to engage in instruction. If a child's motivational orientation presents a particularly difficult challenge to the teacher, the nature of the teacher-child interactions may develop into "gradually stabilizing interaction patterns between the teacher and individual student" that are negative (Salonen et al., 1998, p.144).

Given Jussim's (1986) assertions that teacher expectations are generally accurate and do predict standardized test scores, it is reasonable to question whether from a systems perspective, the affective early relationships that students develop with teachers and school play a significant role in student motivational orientation and subsequent student academic performance, especially on standardized tests, over a period of time.

Research has also shown that low achieving students calculate whether to invest in a cooperative teacher-student relationship on the basis of whether it will pay off (Muller, 1999). For these students, exerting effort is in proportion to the sense of empathy and high
expectation they sense from their teacher and lack of effort and misbehavior when these teacher responses were missing.

Student behavior in classrooms has been found to be a crucial aspect of teacher responsiveness and positive expectations. Muller (1999) found that students who were disruptive, did not complete homework, or who were chronically absent influenced their teachers to disinvest efforts to teach them regardless of the fact that these students' standardized scores were high. Wentzel (1991) found that students who have a long history of academic failure may reject classroom norms and act against them. Teachers were found to ignore academic potential and have lower expectations for students who lacked classroom social competence due to their efforts to control students' behavior. Student response variables play a critical role in the mediation of teacher expectations; therefore, instructional strategies that take into account these powerful influences are necessary.

Teacher Expectations and Traditional Classroom Instruction

When a teacher designs daily instruction, she or he is informed by her expectations of her students and the demands of the school, district, community, and state. Other things being equal, the reciprocal nature of student and teacher interactions discussed previously is a potentially damaging link in the reinforcing loop unless there is a change on other aspects of this paradigm. The discussion up to this point has highlighted psychological constructs such as, personality variables, interpersonal variables, and social cognition and will now examine the instructional process.

What is traditional classroom instruction? A historical perspective marks the industrial revolution as the precursor to the current model of classroom instruction whose primary purposes were to meet the needs of ever increasing numbers of students and societal
pressures to educate the average person to manage within the economic framework (Marsh & Willis, 1999). The National Education Association authored three seminal reports in 1876, 1893 and 1895 that provided the underlying educational structure that is apparent to this day. These reports (as cited in Marsh & Willis, 1999) advocated, "A single unified curriculum linking elementary, secondary and higher education that should reflect the unified nature of knowledge" (p. 59). The "knowledge" reflected a desire to have students taught subjects useful for contemporary society and in effect, "writing off the majority of the nation's children as being more or less uneducable" (Hofstadter, 1963, as cited in Stevenson & Stigler, 1992).

The report advocated a systematic approach, a specified structure to the day, particular subjects and number and length of lessons within a subject. In the past century, these practices became standardized. Grouping according to age was a practical way to assign classes, textbooks were developed to systemize knowledge and instruction such as grade-level sequencing, dividing subjects into units and lessons, group pacing and whole class instructional methods became the norm. With some variations, traditional classroom practice can be characterized by the following sequence: teacher review of the material to be taught, introduction of the new concept/skill, the group supervised in practice activities, and seatwork/homework assigned.

This model of educational delivery was based on pragmatism and not on theories of how people learn. Goodlad, (1983b) studied over 1,000 elementary, middle and secondary classes. He collected state curriculum documents, interviewed teachers, observed classes and compiled questionnaires. He concluded that "the preponderance of classroom activity involving listening (to the teacher), reading textbooks, completing workbooks and
worksheets, and taking quizzes" dominated most classrooms (Goodlad, 1983b, p. 13). He characterized the emotional climate of most of the classes as "flat and neutral" (p. 18). While this in itself may not be injurious to students, it does nothing to change the status quo.

In a study of 400 urban elementary and middle school teachers by Waxman, Huang, Saldana and Padrón (1994), the most common instructional method across all major subject areas was whole class instruction that involved the student receiving instructions, listening to the teacher or completing independent work 95% of the time. Students spent less than 1% of the time interacting with the teacher or each other. In addition teachers spent less than 8% of the time in encouraging extended student responses. While this model of classroom instruction can be effective for some instruction and does not characterize all classrooms or all teachers, it does represent a general theme, the dominance of telling, lecturing, questioning the class and monitoring of seatwork (Goodlad (a), 1983; Waxman & Padrón, 1995; Waxman, Huang, Anderson & Weinstein, 1997). This method of instruction been shown to have adverse effects on minority and students at risk of failure (Waxman & Padrón, 1995).

This pedagogical framework is not necessarily reflective of individual teacher beliefs; it is part of systemic acculturation arising from modeling (the way they were taught), pre-service training, and historical and economic policies. A standard lesson plan design found in most schools today asks teachers to plan objectives, use a hook, make explicit expectations, teach/model, check for understanding, provide guided practice, close and give independent practice (Hunter, 1982).

Many students are successful given traditional instructional practices. Some of the reasons for their success lie in the fact that these same students have found to be the most
represented group when teachers: (a) interact instructionally with students (Padron et al., 1999) and, (b) receive cognitively challenging assignments and choice of assignments (Caruthers 1996; Haberman, 1991). What can be drawn from this is that successful students both interact with teachers and are given cognitively challenging assignments.

Good and Weinstein (1986) reported that differential expectations (both positive and negative) are communicated in classrooms in six instructional domains. (see Table 1)

Table 1

<table>
<thead>
<tr>
<th>Communication of Differential Expectations (Good &amp; Weinstein, 1986)</th>
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<tr>
<td><strong>Task environment (curriculum, procedures, task definition, pacing)</strong></td>
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<tr>
<td><strong>Grouping practices</strong></td>
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<td><strong>Locus of responsibility for learning</strong></td>
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<tr>
<td><strong>Feedback and evaluation practices</strong></td>
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<td><strong>Motivational strategies</strong></td>
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<tr>
<td><strong>Quality of teacher relationships</strong></td>
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</tbody>
</table>

The instruction for low achieving students (see Table 1) constitutes what Haberman (1991) called, “a pedagogy of poverty.” Based on the belief that students must achieve basic skills first, low achieving students are instructed primarily in structured rote activities such as
decoding, arithmetic operations, drill and memorization rather than reasoning, problem solving and discussion. These choices on the part of teachers are not lost on students. They are “informative to children about relative ability differences” (Weinstein & McKown, 1998, p. 222). Research has shown that traditional classroom environments contribute to the conditions that affect academic progress for students, especially African American, Hispanic, and low socioeconomic students (Ferguson, 1998a). The curriculum has been shown to be a barrier to some students in that knowledge is presented to students as a “given” and students are not encouraged to engage in the learning process (Hamovitch, 1996).

The affective life of classrooms is recognized as a critical component to student academic performance (Baker, 1999; Birch & Ladd, 1997; Wentzel, 1991). Research done by Hamre and Pianta (2001) has shown that student-teacher relationships as early as kindergarten are predictors of student academic success in middle school. This study followed a sample of 179 students from kindergarten through eighth grade. Teachers rated students’ behavior and the quality of the teacher-child relationship. Longitudinal data on academic grades, standardized test scores, work-habit ratings, and discipline records was gathered through eighth grade. Results found that “relational negativity,” marked by conflict and dependency was related to academic and behavioral outcomes. Because the classroom is a social place as well as an academic setting, “The extent to which children can access the instructional socialization resources of the classroom environment may be in part predicated on teacher-child interactions” (Hamre & Pianta 2001, p. 636). This research suggests that intervention programs that are targeted at improving teacher-student relationships are needed to improve student academic performance.
Shared Inquiry Discussion and Traditional Classroom Instruction

Traditional classroom instruction allows for certain types of interpersonal interactions to dominate. Teacher expectations, within a traditional instruction paradigm, asks teachers to rely on comparative ability, rather than potential and tend to create environments beneficial for only certain types of students. Furthermore, traditional instruction tends to create a tendency for teachers to generalize a mental model of the class for group instruction, perpetuate status and hierarchy for students who have mastered classroom environment, and create a reliance on testing (standardized or otherwise) for information about students. In addition, traditional instructional methods rely on concrete measures of student potential that undermine learning for many students because it narrows the conception of what it means to be smart (Cohen, Lotan, Scarloss, & Arellano, 1999).

Shared Inquiry Discussion begins with a central text that is chosen because it is challenging, rich in ideas and multiple interpretations. Generally, it is a piece that connects to the topic or concept being studied as part of a subject area. The text can be written, such as, an essay, short story or a non-fiction piece, or, it can be a painting, sculpture or a diagram. The text is scaffolded by a variety of pre-discussion strategies that does not assume that students must be able to independently read or understand it thoroughly before the discussion.

The process of Shared inquiry Discussion is the effort to achieve a more thorough understanding of the text by discussing questions, responses and insights with others (Adler, 1984). Strong (1996) suggested that, "society is constructed through social interactions" (p. 18). Shared Inquiry Discussion provides teachers with a way to invite classroom conversations that are intellectual activities as well as "authentic social interactions among
students” (p. 18). Shared Inquiry Discussion teaches students a method of interpreting or reaching an understanding of a text that affirms personal experience and teaches sound reasoning, interpretive analysis and discussion techniques. Students are seated in a circular fashion and instructed in a protocol that supports task focus and positive interpersonal dynamics. During a Shared Inquiry Discussion, students actively develop and use reading, speaking, analysis, synthesis, active listening, conflict resolution, and team building skills. Even though the text is challenging, students are not excluded because of his/her level of reading skill. Engaging in Shared Inquiry Discussion allows all students to participate because it offers students’ opportunities to access higher order thinking skills and a window into multiple perspectives.

Shared Inquiry Discussion differs from other classroom discussions in the process whereby students generate and construct their understanding through a group dynamic. Almasi (1995) found that typical reading discussions are structured as “initiate-respond-evaluate” formats where interpretive authority rests with the teacher. The teacher is this case has “correct” answers in mind and evaluates student responses in light of those answers. In this scenario, “Students’ voices are silenced and their identities within the community are marginalized” (Almasi, 1995, p. 318).

In Shared Inquiry Discussion the focus is not on a single “correct” answer, but on numerous possible alternatives offered during the discussion by group members. Thus, learning is constructed by the participants of a Shared Inquiry Discussion rather than received from the teacher. As students discuss the text and construct meaning, they activate prior knowledge, make connections, and synthesize. Heavy emphasis is placed on discussion protocol, hearing, assessing and responding to others’ comments.
A Shared Inquiry Discussion would proceed in the following manner. Before class, students prepare by multiple careful readings or observations of a text (as in art work), often taking notes on the material. Prior to the discussion, students would be tutored in the protocol of Shared Inquiry (one voice at a time, refer to the text for evidence, discuss ideas not people, focus on the purpose – to understand the text). The teacher/facilitator scaffolds the text by providing the opening and medial questions that would illuminate the big ideas within the text. Students are expected to respond with substantive contributions, take turns and be reflective of group progress, both during and after the discussion. However, since this is a radical departure from regular classroom rules, the facilitator must carefully assess a group’s readiness for open discussion and be prepared to work at times on specific group dynamics such as conversation domination, passivity, off text discussion, and so forth.

Because the teacher is a facilitator, his/her primary role is to enable discussion by scaffolding open-ended questions regarding the text. The secondary role is to guide the flow or pace of the discussion that is taking place not to give answers or subtly steer opinions. A high level of student ownership over content and the process for Shared Inquiry Discussion is essential.

By engaging in Shared Inquiry Discussion students learn to voice their opinions and ideas in a positive, respectful, and cooperative manner. And because all participants come into the Shared Inquiry with a wide range of differing personal knowledge about the text, each participant becomes an equal partner in the group’s quest for understanding. Often classroom power and status become nullified in the process and, therefore, Shared Inquiry Discussion is effective for a wide variety of students (Copeland, 2002).

Ten key ideas developed by Brophy (1999) (see Table 2) that illustrate best
practices related to curriculum that motivates students in learning activities appear to closely align with the aspects of Shared Inquiry Discussion outlined above.

Table 2

Teaching for Understanding: 10 Key Features

1. The curriculum is designed to equip students with knowledge, skills, values, and dispositions that they will find useful both inside and outside of school.
2. Instructional goals emphasize developing student expertise within an application context and with emphasis on conceptual understanding of knowledge and self-regulated application of skills.
3. The curriculum balances breadth and depth by addressing limited content but developing this content sufficiently to foster conceptual understanding.
4. The content is organized around a limited set of powerful ideas (basic understandings and principles).
5. The teacher's role is not just to present information but also to scaffold and respond to students' learning efforts.
6. The students' role is not just to absorb or copy input but also to actively make sense and construct meaning.
7. Students' prior knowledge about the topic is elicited and used as starting place for instruction, which builds on accurate prior knowledge and simulates conceptual change if necessary.
8. Activities and assignments feature tasks that call for critical thinking or problem solving, not just memory or reproduction.
9. Higher order thinking skills are not taught as a separate skills curriculum. Instead, they are developed in the process of teaching subject-matter knowledge within application contexts that call for students to relate what they are learning to their lives outside of school by thinking critically or creatively about it or by using it to solve problems or make decisions.
10. The teacher creates a social environment in the classroom that could be described as a learning community featuring discourse or dialogue designed to promote understanding.

In the 10 key ideas, Brephy (1999) advocates critical thinking, building on prior knowledge, and addressing concepts, among others, and creating a social environment “featuring discourse or dialogue designed to promote understanding” (p. 90). All of these ideas are also found in Shared Inquiry Discussion.
Participating in Shared Inquiry Discussion builds engagement in thinking and learning. It can build skills in the areas of reading, listening, speaking, and critical thinking. Shared Inquiry Discussion enables students to work collaboratively to improve their reading skills since there is no one correct answer. Through repeated readings and thorough analysis of the material, students learn the ability to explore multiple meanings and interpretations. With the positive, supportive climate that Shared Inquiry Discussion demands, students are able to develop their skills at their own pace.

Shared Inquiry Discussion and Teacher Expectations

The better the teacher knows her students, the more accurate her expectations will be for student academic success (Rauenbush 1984). Bamberg (1994) relates low expectations and student academic performance by saying,

Much evidence recommends the central role of the teacher in instruction, but research suggests that the most effective learning occurs when a balance exists between teacher-directed and student-directed instruction. The balance becomes particularly important when the goal of the instructional process is to engage students in activities that are intellectually challenging. To achieve this balance, teachers should: explicitly teach the underlying thinking processes, encourage the students to use each other as learning resources and gradually turn over responsibility for students' learning to the students across the school year. (p. 16)
These statements of educational philosophy provide the underlying principles that bring us to the aim of this section. How the practice of Shared Inquiry relates to the mechanisms of teacher expectancy behaviors provides insight into the possible impact Shared Inquiry Discussion will have on teacher expectations. The training required in order to facilitate a Shared Inquiry Discussion and the very nature of Shared Inquiry processes requires teachers and participants to suspend judgment. The discussion is not evaluative, but reflective and exploratory. The behaviors of participants that are facilitated by the leader require listening, responsiveness, clarification, active questioning and textual reference. Because the discussion falls in a continuum of possible interpretations and answers are not either right or wrong, student responses are not "smart or stupid" or "abstract or concrete."

In so doing, a climate of security and acceptance is created.

The teacher must consciously address his or her own attitudes, beliefs, and assumptions about the students and text to model Shared Inquiry behaviors. Shared Inquiry process necessitates a constant challenge to the teacher's implicit theory orientation. The discussion does not comfortably allow the teacher to categorize student responses as right or wrong and thereby reinforce the teacher's expectation of that student's intelligence. Student responses no longer fit into the mental model created by the teacher and expectations are malleable.

Shared Inquiry Discussion requires high quality texts (challenging material) that inherently contain multiple ideas and therefore, interpretations. Individual students are helped to "read" the text through a variety of supportive scaffolding structures prior to the
discussion. The text may be read aloud, pre-read (multiple times) with annotations, and vocabulary development.

Even though some students may not exhibit fluency at reading the text in round robin fashion, they can participate in the discussion. Responses from students are probed for textual reference as part of the discussion process. This is a gradual, but critical skill acquisition during Shared Inquiry Discussion. The group must unpack the ideas within the text and construct possible interpretations by citing passages in the text. No one interpretation is ever possible. When teachers witness that students, who were believed not capable of “reading” such text, can discuss the ideas inherent within the text, their expectations for that student are challenged.

As discussed in chapter I, teachers communicate expectations in distinct ways that impact student academic performance. If engaging in Shared Inquiry Discussion challenges teachers’ expectations and encourages higher expectations, then it would be expected that several aspects of positive communication of expectations should be evident in classrooms.

A comparison of Rosenthal’s (1973) four-factor theory of the way teachers communicated positive expectations is compared to aspects of Shared Inquiry Discussion is shown in Table 3. As shown by comparison, the impact and effect of Shared Inquiry Discussion in classrooms are closely aligned with how Rosenthal posited teachers show high expectations.
<table>
<thead>
<tr>
<th>Table 3</th>
<th>Rosenthal’s Four-Factor Theory and SID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rosenthal Theory</strong></td>
<td><strong>Elements of Shared Inquiry Discussion</strong></td>
</tr>
</tbody>
</table>
| Feedback – responses students receive from teachers | “Seminars positively affected student perceptions of school, their teachers and their self-concept.”

Output – encourage and expect greater responsiveness from those students of whom they expect more both verbally and non-verbally, expect more qualitative work | “... The most significant gain being made by females in the post-test scores; students in lower ability groups made greater gains than average and high ability groups.”

| Climate – smiling and nodding more, greater eye contact, leaning closer to student, accept ideas, give affirmation | Statistically significant effects were seen for several student affective measures:
1. Student interpersonal relationships, student cohesiveness, student satisfaction with school, student involvement in school-related activities, and lack of friction (i.e., calmness / lack of disruption).
2. Student perception about clarity and consistency of rules.
4. Student’s perceived quality of teachers: Teachers who were considered better at explaining information, ensuring students had a good understanding, expected more effort at working, are more likely to make students think, taught in interesting ways, and showed by example that learning is fun.
5. Classroom climate: classes with reduced friction, where there is little fooling around, students are calm and not mean, and students feel safe. Students see more flexibility in the classroom.

Input – teach more, give more challenging work | “The text for Shared Inquiry may include a poem, play, painting, novel, essay, sermon, and more. Almost any text will work if it is rich in ideas that challenge and engage the participant. The text should be incomprehensible to students, and must contain an abstract idea. If the students understand the text immediately there is nothing to discuss.”

Summary

In summary, findings from the current research on teacher expectations support the theoretical underpinnings of this study: teacher expectations are a critical part of classroom life, that both impact students and are responded to by students. Just how instructional activities can serve to enhance or reinforce expectations is an area of investigation that requires more attention.
Chapter III

METHODOLOGY

Introduction

The purpose of this study was to investigate the impact of teacher use of Shared Inquiry Discussion, an instructional process, on teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale) and demographic data.

Research has shown that the expectations for students on the part of teachers play an important part in the academic and social development of students in the classroom (Good & Brophy, 2000). This study sought to determine if a specific instructional approach positively impacted teacher expectations and to what degree, if any, did specific demographic variables have on the teacher expectations of the participants.

Following the objective will be the research questions and the null hypotheses. The population sample and setting will then be described. The next section will explain the instrumentation followed by an explanation of the data collection procedures and data analysis. The statistical analysis will then be discussed.

This objective of this chapter is to present the research design. This study compared the teachers' expectations of 30 teacher subjects who practice Shared Inquiry using the Academic Performance Rating Scale Instrument. These teachers completed the scale on their students (N=457) at two points in time.
Research Questions

1. How does use of Shared Inquiry Discussion impact teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale)?

2. How does Shared Inquiry Discussion model (Great Books, Socratic Seminar, or Combined) impact teacher expectations for student academic performance as measured by the APRS?

3. How do student and teacher demographic factors impact teacher expectations for teachers who use Shared Inquiry Discussion?

Null Hypotheses

Ho1: There will be no change in teacher expectations for student academic performance before and after use of any of the Shared Inquiry Discussion (SID) models.

Ho2: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with the type of SID model used.

Ho3: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with student and teacher demographic factors.

---

1 As measured by three scales: 1) Academic success; 2) Impulse control, and; 3) Academic productivity (see Instrumentation Section in Chapter III for a discussion of these measures).

2 SID Models: 1) GBS; 2) SS; 3) Socratic, or 4) Combination (see Definition of Terms for a discussion of these models).

3 Student: 1) Ethnicity, and; 2) Socio-economic status

Teacher: 1) Years of teaching experience; 2) Years of experience using the SID; 3) SID expertise (see Chapter IV Methodology for a discussion of these measures).
Subjects

The teachers who participated in this study (N=30) were composed of 30 certified regular education and special education teachers in grades K-12 from New York, Minnesota, Indiana and Arizona. Of the 30 teachers, 27 were elementary teachers and 3 were high school teachers. The majority of the subjects (N=25) were from two elementary schools in a large urban district in Southern Westchester County, New York. The remaining subjects were from suburban districts in Northern Westchester County, the Midwest, and the Southwest. These subject teachers completed scales on (N=457) students at the beginning and middle of the 2003-2004 school year. The students according to teacher reported data on the scale itself comprised the full range of ethnic and socioeconomic demographic variables. Student populations of each classroom for each of the subjects contained regular education and special education students and ranged from ability grouped to heterogeneously grouped students. Class sizes ranged from 5 to 33 students per class. According to teacher perceptions, the socioeconomic status of the student populations ranged from poor to high socioeconomic status.

All subjects were volunteers who agreed to participate in the study and who met the following requirements: formal training in Shared Inquiry Discussion and use of this instructional strategy once a week during the course of the study.

The teacher volunteers for the study were recruited by means of a letter or phone call to the teachers, respective principals, or superintendents in the spring of the 2003-2004 school year. The letter briefly described the purpose of the study and expectations of
participants. The teachers and administrators were told that this study would seek to examine the impact of Shared Inquiry Discussion in the classroom.

The subjects were initially found through contact with the Junior Great Books, Touchstones, and Paideia organizations. These organizations provided names of schools or individuals who had participated in training and that used that organization’s material. Additional subjects were found through Internet searches using search terms such as “Socratic Seminar” and “Junior Great Books Discussion.” They were recruited by means of a phone call or letter to teachers, respective principals, and superintendents in the spring and summer of the 2002-2003 school year. For those contacts out of state correspondence was conducted through emails. The letter briefly described the purpose of the study and expectations of participants. The teachers and administrators were told that this study would seek to examine the impact of Shared Inquiry Discussion in the classroom.

Instrumentation

The instrument used in this study was the Academic Performance Rating Scale (APRS) DuPaul & Rapport (1991) (see Appendix A).

Academic Performance Rating Scale

The Academic Performance Rating Scale (APRS) is a scale of 19 five-point Likert style questions that reflect teachers’ perceptions of children’s academic performance and abilities in classroom settings (DuPaul & Rapport, 1991, see Appendix A). This scale can be used holistically and can be used to measure three other constructs: Academic Success, Academic Productivity, and Impulse Control.

This scale was chosen because it would provide information about students both academically and socially following a major premise of this study that the classroom is both
an academic and social place. This scale was primarily developed to assess the classroom performance of students with behavior issues and to monitor changes in performance with intervention. However, this scale was compelling for use in this study due to the fact that it was created to (a) sample a curriculum in use, (b) sample various skills across academic domains (c) use a response format that does not require students to perform behavior (d) and show sensitivity to small changes in student performance (DuPaul & Rapport, 1991, p. 2). In addition, the authors note that the APRS has a "unique focus on academic competencies rather than behavioral deficits and further it would provide important data regarding the social validity of teacher perceptions of changes in academic status" (p 10).

Taken as a whole, this rating scale is a valid measure of a teacher's perception of a student's academic performance in educational situations. This scale was factor analyzed using a principal component analysis followed by a normalized varimax rotation with iterations. Three components with eigenvalues greater than unity were extracted, accounting for approximately 68% of the variance that were labeled: Academic Success (7 items), Academic Productivity (12 items), and Impulse Control (3 items).

This scale was designed to obtain teacher perceptions of specific aspects of a student's academic performance and to monitor those changes in those skills associated with a treatment, such as, a curriculum in use. Therefore the utility of this scale in reference to this study seemed closely matched in that the effect of the treatment (Shared Inquiry Discussion) could be measured against teacher perceptions (expectations) of student academic performance both academically and socially.
Internal Consistency and Reliability of the APRS

According to the maker, the total APRS has internal consistency at (.95) based on an analysis of the coefficient alphas. The three sub scales had internal consistencies of .94 for Academic Success, .94 for Academic Productivity and .72 for Impulse Control. Test-retest reliability using a sub sample of 25 children across a two-week period found that the reliability coefficient was also .95 for the total APRS, .91 for Academic Success, .93 for Academic Productivity and .88 for Impulse Control.

In addition, the authors compared the two mean scores for each scale using separate t-tests to rule out the possibility that scores on the rating scale did not improve due to repeated administrations. The total APRS score for this comparison was ($t(24) = 1.24, N.S.$), Academic Success was ($t(24) = 1.31, N.S.$), Academic Productivity ($t(24) = 1.32, N.S.$), and Impulse Control ($t(24) = 1.5, N.S.$).

Three separate measures were used to determine the concurrent validity of the APRS:
1. Observational Measures: research assistants observed students for whom teachers had previously completed an APRS. Observations were made regarding on task behavior for 20 min. The data were included as an index of academic engaged time.
2. Academic Efficiency Score: These data represented the mean weekly percentage of academic assignments completed correctly relative to classmates.
3. Published norm-referenced achievement test scores. The results of school based norm-referenced achievement tests (the CTB/McGraw-High, 1982) were obtained for each student in the validity sample.
Overall, the absolute values of correlation coefficients ranged from .22 to .72 with 24 of the 28 coefficients achieving statistical significance.

Two of the sub scales, Academic Success and Academic Productivity were found to exhibit divergent validity. The Academic Success sub scale is comprised of items related to the outcome of academic performance, such as, on standardized tests, and the Academic Productivity sub scale is related to criterion variables that present factors associated with achieving classroom success. This scale and its sub scales provide important data concerning teacher perceptions of changes in a student’s academic status.

Using the actual data sample, the entire scale and the Academic Success and Academic Productivity sub scales achieved reliability coefficients above .90. However, the Impulse Control Scale sub scale received a reliability coefficient of .54 in contradiction to the reported .72 by the maker. This sub scale is comprised of three items which was problematic according to Abrami, Cholinsky and Gordon (2001), and, any test reliability below .6 is considered marginal and results derived from this sub scale are not considered reliable. Therefore assertions arising from the data results with regards to this sub scale cannot be made. This sub scale was not used in data analysis.

Data Collection

The design in this study was a cross sectional study at two points in time. At the beginning of the study, teachers were identified by means of web queries using the search terms, “Socratic Seminar”, “Paideia”, “Great Books”. Phone calls were made to administrators in the districts selected. Letters of solicitation were sent to districts that agreed to participate. Teachers who agreed to participate were sent letters requesting permission to participate in the study. After initial contact had been made, a pool of teachers
(N=39) and (N=600 students) was assembled for the study. Prior to data collection, permission from the Institutional Review Board of Seton Hall University in South Orange, New Jersey and from Dr. George DuPaul, author of the APRS, was obtained.

Teachers were coded with a number from 1 to 39 and a data table of teacher demographic information was created. Teachers submitted information about: years of teaching experience, years using Shared Inquiry Discussion, self-perceived level of expertise with Shared Inquiry Discussion, and finally model of Shared Inquiry Discussion used (Junior Great Books, Socratic Seminar, or combined approach). This teacher information constituted the teacher demographic variables used in the study.

Approximately 3 to 6 weeks into each teacher's school year (each school district had a different opening date, ranging from mid-August in the southwest to September 6 in the northeast), each teacher completed the Academic Performance Rating Scale (APRS) for students in his/her class. On each APRS, teachers indicated the socioeconomic and ethnic identification for the student based on teacher perception. Teachers chose between "high," "middle," or "low," for socioeconomic status. Teachers also assigned an ethnicity based on the following choices: "African American", "Hispanic", "Asian, Eskimo", "Middle Eastern", "Native American", "White," or "Other."

Each teacher used a random three-digit number to code each student in his or her class to ensure anonymity from the researcher. Each teacher was asked to keep this class list in a safe place, or, the class lists were placed with the building principal, for use during the second administration. Each completed APRS was labeled with a three-digit number. Class sets were coded with a teacher identification number.
Teachers had a choice of completing the survey online or using paper copies. During this phase, contact was made with each participant or building principal to determine the preferred method of response and to clarify instructions. If teachers chose to complete the survey online, email communication was maintained throughout. The URL for the survey website was sent via email. The fields for teacher information were input online. If a paper copy was used, the rating scale was either mailed or hand delivered. Follow-up calls were made to assure receipt of rating scale and understanding of their use.

Survey responses were collected in three ways. The online data was downloaded from the secure website into an Excel database. If the rating scale was mailed, teachers were instructed to return them to the researcher within a 2-week period following receipt of the confidential envelope. If surveys were hand-delivered, the researcher picked them up once teachers had completed them.

The major assumption in this study, verified by building administrators and study subjects, was the instructional use of one or more forms of Shared Inquiry Discussion during the duration of the study.

During the second data collection time period 9 of the 39 teachers were unavailable or unable to complete the second survey set, therefore the final study sample resulted in 30 teachers who responded about 457 students. The initial data set for the 9 subjects who were unable to participate were removed from the data set used for analysis.

Data Analysis

All statistical analyses were performed using SPSS for Windows (SPSS 12.0, SPSS Inc., and Chicago, IL). Both descriptive and inferential statistical methods were employed. All testing was based on determining statistical significance at a two-sided alpha level of
Parametric tests were used when the assumptions for the test were satisfied. Otherwise non-parametric tests were used. The study sample was described using measures of central tendency (mean and median) and dispersion (standard deviation and range) for continuous/ordinal scaled variables and frequency and percent for categorical scaled variables. Initially univariate approaches were undertaken. Then, a multivariate linear regression was attempted to identify independent predictors of the change (Before versus After SID) in each of the scales. For research question 1 the Wilcoxon Signed-Ranks test was used, separately for each scale, to compare the distribution of the scale before and after the SID intervention. For research question 2 a one-way analysis of variance (ANOVA) with post-hoc Bonferroni adjusted t-tests was used to compare the distribution of the change (pre versus post SID intervention) in each of the scales between the three types of SID models. For research question 3 a Spearman’s Rho statistic was used to evaluate linear relationships between each of the scales and: (a) teacher’s years of teaching experience and (b) teacher’s years of experience using the SID. A one-way analysis of variance (ANOVA) with post-hoc Bonferroni adjusted t-tests was used to compare the distribution of the change (pre versus post SID intervention) in each of the scales between the various categories of: (a) Student ethnicity; (b) Student socio-economic status, and; (c) Teacher’s level of expertise with the SID.
Chapter IV

RESULTS OF THE INVESTIGATION

Introduction

The purpose of this study was to investigate the impact of teacher use of Shared Inquiry Discussion, an instructional process, on teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale) and demographic data. Further, this study attempted to examine if the independent variables of teacher experience, Shared Inquiry experience, perception of expertise, Shared Inquiry model, student ethnicity, student socioeconomic status related to teacher expectations for student academic performance. The results of this study are examined in this chapter.

Analysis of the Data

This chapter, which is divided into three main sections, presents the findings of this study and describes the procedures used to arrive at the results. The first section of this chapter will present the descriptive data, the second section will describe instrument, the Academic Performance Rating Scale (APRS) (DuPaul & Rapport, 1991), and in the final section each hypothesis will be presented with the statistical procedures used to either support or reject the null hypotheses.

Descriptive Data Analysis

Characteristics of the Study Sample

The total sample consisted of 30 teachers. All teachers were certified and had been trained in Shared Inquiry Discussion. Summaries of demographic characteristics are presented in Tables 4 and 5 (see Appendix B for related histograms).
Of the sample population, more than half (58.7%) believed they were proficient in using this strategy (see Table 4). In Table 1 there were 7 (23.3%), 17 (56.7%) and 6 (20%) subjects with expertise levels novice, proficient and expert respectively.

Table 4

<table>
<thead>
<tr>
<th>Teacher Expertise Level with SID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Novice</td>
</tr>
<tr>
<td>Proficient</td>
</tr>
<tr>
<td>Expert</td>
</tr>
<tr>
<td>Valid</td>
</tr>
</tbody>
</table>

In Table 5, the average (SD) years of experience using SID was 4.53 (3.1) and the range was 0 to 15. The average (SD) years of teaching experience was 10.30 (6.6) and the range was (2, 33).

Table 5

<table>
<thead>
<tr>
<th>Teacher Experience with SID</th>
</tr>
</thead>
<tbody>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Valid Missing</td>
</tr>
<tr>
<td>TeachSidYears</td>
</tr>
<tr>
<td>TeachExp</td>
</tr>
</tbody>
</table>

In Table 6, with respect to the student as the unit of observation, there were 41 (9%), 194 (42.5%), and 222 (48.6%) teacher subjects using Junior Great Books, Socratic Seminar, or a combination respectively. As seen in Table 6, nearly half of the sample population used
a combined approach to Shared Inquiry Discussion, that is, they used both Socratic Seminar and Junior Great Books approaches.

Table 6

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>JGB</td>
<td>41</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>SS</td>
<td>194</td>
<td>42.5</td>
<td>42.5</td>
<td>51.4</td>
</tr>
<tr>
<td>Com</td>
<td>222</td>
<td>48.6</td>
<td>48.6</td>
<td>100</td>
</tr>
<tr>
<td>Valid Total</td>
<td>457</td>
<td>100</td>
<td>190</td>
<td></td>
</tr>
</tbody>
</table>

Tables 7 and 8 summarize the demographic characteristics of students used in this study as perceived by teacher subjects. Teacher subjects reported that there were 90 (19.7%) African American, 171 (37.4%) Hispanic, 13 (2.8%) Asian, 18 (3.9%) Middle Eastern, 130 (28.4%) White, and 33 (7.2%) Other ethnicities represented. (see Table 7)

Table 7

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>90</td>
<td>19.7</td>
<td>19.8</td>
<td>19.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>171</td>
<td>37.4</td>
<td>37.6</td>
<td>57.4</td>
</tr>
<tr>
<td>Asian</td>
<td>13</td>
<td>2.8</td>
<td>2.8</td>
<td>60.2</td>
</tr>
<tr>
<td>MidEast</td>
<td>13</td>
<td>2.8</td>
<td>4</td>
<td>64.2</td>
</tr>
<tr>
<td>White</td>
<td>130</td>
<td>28.4</td>
<td>28.6</td>
<td>92.7</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>7.2</td>
<td>7.3</td>
<td>100</td>
</tr>
<tr>
<td>Valid Total</td>
<td>455</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>2</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
There were 68 (14.9%), 261 (57.1%), and 125 (27.4%) students who were perceived to be of high, medium or low socioeconomic status by the study subjects (see Table 8).

Table 8

<table>
<thead>
<tr>
<th>Socio-economic Status</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>68</td>
<td>14.9</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Med</td>
<td>261</td>
<td>57.1</td>
<td>57.5</td>
<td>72.5</td>
</tr>
<tr>
<td>Low</td>
<td>125</td>
<td>27.4</td>
<td>27.5</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>454</td>
<td>99.3</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>3</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Figure 3, the data was a slightly skewed bell curve with the majority of the student population who was believed to be of medium socioeconomic status.

![Figure 3. Student Socio-economic Status Distribution](image-url)
The Academic Performance Rating Scale (Dupaul & Rapport, 1991) is a 19 item scale that provides a measure of teacher perception of students in three broad sub scales: Academic Success (7 items), Academic Productivity (12 items), and Impulse Control (3 items). Taken as a whole, this rating scale is a valid measure of a teacher's perception of a student's academic performance in educational situations. This scale was developed to "reflect teachers' perceptions of children's academic performance and abilities in classroom settings" (p. 3) and to monitor changes in those skills associated with a treatment, such as, a curriculum in use. Therefore the utility of this scale in reference to this study seemed closely matched in that the effect of the treatment (Shared Inquiry Discussion) could be measured against teacher perceptions (expectations) of student academic performance across academic domains.

The Academic Success sub scale is comprised of items related to the outcome of academic performance, such as, on standardized tests. Items that comprised this scale are: "How consistent was the quality of this child's academic work over this past week?" How quickly does this child learn new material? What is the quality of this child's reading skill? Speaking skill?" This scale is related to classroom performance outcomes, such as the quality of a child's academic achievement.

The Academic Productivity sub scale is related to criterion variables that present factors associated with classroom success. For example, items on this sub scale include: "Estimate the percentage of written language arts work completed (regardless of accuracy) relative to classmates." "How frequently does the student accurately follow instructions during class discussion?" "How frequently does the child take more time to complete work than his/her classmate?" "How often does the child appear withdrawn or tend to lack an
emotional response in a social situation?" This scale attempted to measure teachers’
perception of behaviors that are important in the process of achieving classroom success.

As highlighted in Chapter III, the Impulse Control sub scale was not found to have a
Cronbach Alpha statistic, an internal consistency, that met the acceptable threshold of .6
using the actual study data and therefore will not be used (Abrami, Cholmsky & Gordon,
2001). Two of APRS sub-scales were analyzed for this study. The responses were ranked on
a five-point Likert scale. The APRS and its sub scales provide important data concerning
teacher perceptions of changes in students academically.

Quantitative Data Analysis

To answer the primary research questions, the quantitative data was analyzed using
SPSS Version 12.0, which is a computer based statistical software package.

Research Questions

1. How does use of Shared Inquiry Discussion impact teacher expectations for student
   academic performance as measured by the APRS (Academic Performance Rating Scale)?

2. How does Shared Inquiry Discussion model (Great Books, Socratic Seminar, or
   Combined) impact teacher expectations for student academic performance as measured by
   the APRS?

3. How do student and teacher demographic factors impact teacher expectations for
   teachers who use Shared Inquiry Discussion?
Null Hypotheses

Ho1: There will be no change in teacher expectations for student academic performance before and after use of any of the Shared Inquiry Discussion (SID) models.

Ho2: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with the type of SID model used.

Ho3: The amount of change in teacher expectations for student academic performance before and after use of the Shared Inquiry Discussion (SID) will not be associated with student and teacher demographic factors.

Findings related to research questions

Data was analyzed using the following techniques: the Wilcoxon Signed-Ranks test, a one-way analysis of variance (ANOVA) with post-hoc Bonferroni adjusted t-tests and Spearman's Rho, a correlational matrix.

To answer the first research question: how does use of Shared Inquiry Discussion impact teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale), the Wilcoxon Signed-Ranks test, was used separately, for each scale, to compare the distribution of the scale before and after the SID intervention. The Wilcoxon Signed-Ranks test was used because the data for the scale was slightly skewed.

1 As measured by three scales: 1) Academic success; 2) Impulse control, and; 3) Academic productivity (see Instrumentation Section in Chapter III for a discussion of these measures).

2 SID Models: 1) JIR; 2) JS; 3) Touch, or; 4) Combination (see Definition of Terms for a discussion of these models).

3 Student: 1) Ethnicity, and; 2) socio-economic status.

Teacher: 1) Years of teaching experience; 2) Years of experience using the SID; 3) SID expertise (see Chapter III Methodology for a discussion of these measures).
The entire Academic Performance Rating Scale and two of its sub scales, Academic Success and Academic Productivity achieved statistical significance.

Figure 4 is a boxplot showing the distribution of the total score for the APRS, separately for before and after the SID intervention.

![Boxplot](image)

**Figure 4.** Boxplot – distribution of total APRS.

As indicated by the solid horizontal black line, it appears the median is slightly larger for the post intervention measure. The average (SD) total score for the entire scale was 65.7 (15.9) versus 67.2 (16.6) for before and after SID intervention \( (p = 0.098) \).
Figure 5 is a boxplot showing the distribution of the Academic Success sub scale, separately for before and after the SID intervention.

![Boxplot of Academic Success Subscale](image)

**Figure 5.** Boxplot – distribution of academic success sub scale.

As indicated by the solid horizontal black line, it appears the median is slightly larger for the post intervention measure. The average (SD) total score for the Academic Success sub scale was 23.2 (7.3) versus 23.8 (7.3) for before and after SID intervention \((p = .015)\).
Figure 6 is a boxplot showing the distribution of the Academic Productivity sub scale, separately for before and after the SID intervention.

![Boxplot - distribution of academic productivity sub scale.](image)

As indicated by the solid horizontal black line, it appears the median is slightly larger for the post intervention measure. The average (SD) total score for the Academic Productivity sub scale was 42.6 (11.0) versus 43.6 (11.1) for before and after SID intervention ($p = 0.020$).
Table 9 shows a summary of the results from the Wilcoxon Signed Ranks test for the entire scale and each of the two sub scales.

Table 9

*Wilcoxon t-test for APRS Pre-Post*

<table>
<thead>
<tr>
<th>Academic Performance Rating Scale</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Performance Total (Before SID)</td>
<td>457</td>
<td>65.718</td>
<td>15.89098</td>
<td></td>
</tr>
<tr>
<td>Academic Performance Total (After SID)</td>
<td>457</td>
<td>67.158</td>
<td>16.6344</td>
<td>0.008</td>
</tr>
<tr>
<td>Academic Success Sub scale (Before SID)</td>
<td>457</td>
<td>23.223</td>
<td>7.28752</td>
<td></td>
</tr>
<tr>
<td>Academic Success Sub scale (After SID)</td>
<td>457</td>
<td>23.84</td>
<td>7.3433</td>
<td>0.015</td>
</tr>
<tr>
<td>Academic Productivity Sub scale (Before SID)</td>
<td>457</td>
<td>42.643</td>
<td>10.9953</td>
<td></td>
</tr>
<tr>
<td>Academic Productivity Sub scale (After SID)</td>
<td>457</td>
<td>43.589</td>
<td>11.09989</td>
<td>0.020</td>
</tr>
</tbody>
</table>

p < .05

The results indicated that, since the entire scale and two of the sub scales achieved statistical significance, the null hypothesis, that there is no difference in total score between before and after SID intervention, is rejected and it is concluded that there was a statistically significant increase in the total Academic Performance Scale score, the Academic Success sub scale, and the Academic Productivity sub scale.

For the second research question, how does SID model (Great Books, Socratic Seminar or Combined) impact teacher expectations for student academic performance as
measured by the APRS, a one-way analysis of variance (ANOVA) was used. Figure 7 is a boxplot showing the distribution of the change (pre-post) in total score, separately for each type of SIDs model.

![Boxplot](image)

**Figure 7.** Boxplot distribution of SIDs model used.

As indicated by the solid horizontal black lines, it appears the median is highest for the Com. Model, lowest for the JGB model and the SS model appears very similar to the Com. model. The average (SD) change in total score was -2.95 (13.0) versus 1.63 (14.9) versus 2.1 (10.3) for the JGB, SS and Com models respectively ($p = 0.065$).
Based on these results, there is insufficient evidence, at the .05 level of significance, to conclude that the change in total score was different for any of the three models, and therefore the null hypothesis is accepted.

However, while the data suggests that the amount of change between Shared Inquiry Discussion models is not significant, as can be seen in Table 10, the result in the ANOVA for the Academic Performance Total Change ($p = .065$) approached significance, therefore, a future study with a larger sample size may be warranted to investigate this further.

Table 10

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>890.041</td>
<td>2</td>
<td>445.02</td>
<td>2.755</td>
<td>0.065</td>
</tr>
<tr>
<td>AqTotalChg (After - Before) Total</td>
<td>73234.56</td>
<td>454</td>
<td>161.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>148.193</td>
<td>2</td>
<td>74.097</td>
<td>2.424</td>
<td>0.09</td>
</tr>
<tr>
<td>AcSuccessChg (After - Before) Total</td>
<td>13879.79</td>
<td>454</td>
<td>30.572</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>333.665</td>
<td>2</td>
<td>166.833</td>
<td>2.135</td>
<td>0.119</td>
</tr>
<tr>
<td>AqProductChg (After - Before) Total</td>
<td>35479.97</td>
<td>454</td>
<td>78.15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the third research question, **how** do student and teacher demographic factors impact teacher expectations for teachers who use SID, a one-way analysis of variance
(ANOVA) or the Spearman’s Rho correlation was used as appropriate to compare the scales to demographic variables.

The results showed that there were two significant findings: (a) the academic success sub scale was related to student socioeconomic status; (b) as years of experience using Shared Inquiry Discussion increased, expectations for Academic Success increased. None of the other scales showed a significant relationship with the other variables.

A one-way analysis of variance (ANOVA) was used with post-hoc Bonferroni adjusted t-tests to compare the distribution of the change (pre versus post SID intervention) in each of the scales between the various categories of: (a) Student ethnicity; (b) Student socio-economic status, and; (c) Teacher perception of SID expertise.

The first ANOVA was done to compare the APRS and its sub scales to student ethnicity. The results (see Table 11), total APRS ($p = .577$), Academic Success ($p = .478$) and Academic Productivity ($p = .498$), showed that the ANOVA was not significant for the total APRS ($p = .577$) or any of the sub scales (Academic Success $p = .478$; Academic Productivity $p = .498$) and student ethnicity.

Table 11

Analysis of Variance (ANOVA) Comparing APRS and Student Ethnicity

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ApTotalChg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(After - Before)</td>
<td>Between Groups</td>
<td>624.604</td>
<td>5</td>
<td>124.921</td>
<td>0.762</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>73578.83</td>
<td>449</td>
<td>163.873</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>74203.43</td>
<td>454</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AcSuccessChg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(After - Before)</td>
<td>Between Groups</td>
<td>139.697</td>
<td>5</td>
<td>27.939</td>
<td>0.904</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>13876.88</td>
<td>449</td>
<td>30.906</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14016.58</td>
<td>454</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AcProductChg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(After - Before)</td>
<td>Between Groups</td>
<td>345.588</td>
<td>5</td>
<td>69.118</td>
<td>0.875</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>35467.15</td>
<td>449</td>
<td>78.991</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>35812.73</td>
<td>454</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$p < .05$
The second ANOVA was done to compare the APRS and its sub scales to student socioeconomic status. The results (see Table 12) revealed that the ANOVA was significant only for the Academic Success and student socioeconomic status ($p = 0.030$), but not for the total ($p = .315$) or the Academic Productivity sub scale ($p = .677$).

Table 12

**Analysis of Variance (ANOVA) Comparing APRS and Student Socioeconomic Status**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>377.725</td>
<td>2</td>
<td>188.863</td>
<td>1.158</td>
<td>0.315</td>
</tr>
<tr>
<td>Within Groups</td>
<td>7350.89</td>
<td>451</td>
<td>163.684</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>73928.62</td>
<td>453</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>214.552</td>
<td>2</td>
<td>107.281</td>
<td>3.533</td>
<td>0.03</td>
</tr>
<tr>
<td>Within Groups</td>
<td>13693.01</td>
<td>451</td>
<td>30.361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13907.57</td>
<td>453</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>61.641</td>
<td>2</td>
<td>30.821</td>
<td>0.39</td>
<td>0.677</td>
</tr>
<tr>
<td>Within Groups</td>
<td>35655.48</td>
<td>451</td>
<td>79.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35717.12</td>
<td>453</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$p < .05$
Figure 8 is a boxplot showing the distribution of the change (pre-post) in academic success sub scale score, separately for student socio-economic group.

![Boxplot](image)

Figure 8. Boxplot distribution academic success sub scale and student socio-economic status.

As indicated by the solid horizontal black lines, it appears the median is highest for the low socioeconomic group. The high and medium groups appear to be similar. The average (SD) change in total score for the sub scale was .6 (6.7), .1 (5.3) and 1.7 (5.2) for the high, medium and low socioeconomic groups respectively ($p = 0.030$).

The post-hoc Bonferroni adjusted t-tests was used to determine which groups were different.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) Student SES</th>
<th>(J) Student SES</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>p</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Med</td>
<td>2.2074</td>
<td>1.73872</td>
<td>0.615</td>
<td>-1.9706</td>
</tr>
<tr>
<td>Aprs Total Chg</td>
<td>Low</td>
<td>Med</td>
<td>0.62506</td>
<td>1.92431</td>
<td>1</td>
<td>-3.9899</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>-2.2074</td>
<td>1.73872</td>
<td>0.615</td>
<td>-6.3854</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Med</td>
<td>-1.58234</td>
<td>1.38907</td>
<td>0.766</td>
<td>-4.9202</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>-0.62506</td>
<td>1.92431</td>
<td>1</td>
<td>-5.2491</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>1.58234</td>
<td>1.38907</td>
<td>0.766</td>
<td>-1.7555</td>
</tr>
<tr>
<td>Ac Success Chg</td>
<td>High</td>
<td>Med</td>
<td>0.49887</td>
<td>0.75021</td>
<td>1</td>
<td>-1.3038</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Med</td>
<td>-1.09435</td>
<td>0.83029</td>
<td>0.564</td>
<td>-3.0895</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>-0.49887</td>
<td>0.75021</td>
<td>1</td>
<td>-2.3016</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Med</td>
<td>-1.59323(*)</td>
<td>0.59935</td>
<td>0.024</td>
<td>-3.0334</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>1.09435</td>
<td>0.83029</td>
<td>0.564</td>
<td>-0.9008</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>1.59323(*)</td>
<td>0.59935</td>
<td>0.024</td>
<td>0.153</td>
</tr>
<tr>
<td>Ac Product Chg</td>
<td>High</td>
<td>Med</td>
<td>0.08147</td>
<td>1.21059</td>
<td>1</td>
<td>-2.8275</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Med</td>
<td>-0.75788</td>
<td>1.33981</td>
<td>1</td>
<td>-3.9774</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>-0.08147</td>
<td>1.21059</td>
<td>1</td>
<td>-2.9905</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Med</td>
<td>-0.83936</td>
<td>0.96755</td>
<td>1</td>
<td>-3.1634</td>
</tr>
<tr>
<td></td>
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<td>High</td>
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<td>1.33981</td>
<td>1</td>
<td>-2.4616</td>
</tr>
<tr>
<td></td>
<td>Med</td>
<td>High</td>
<td>0.83936</td>
<td>0.96715</td>
<td>1</td>
<td>-1.4846</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

As indicated in table 13, on the Academic Success scale, the low socioeconomic group was significantly different than the medium socioeconomic group (p = 0.024). The academic success score increased by 1.7 on average in the low socioeconomic group compared to 0.1 average increase in the medium socioeconomic group (p = 0.024).
Therefore, there was a greater increase in academic success score in the low socioeconomic group than in the medium socioeconomic group.

Because some of the variables were continuous, the Spearman’s Rho statistic was used, for the next analysis, to evaluate linear relationships between each of the scales and: (a) teacher’s years of teaching experience, and; (b) teacher’s years of experience using the SID. Table 14 shows the correlation between these variables.

Table 14

*Spearman’s RHO Correlation Matrix Comparing APRS and Teacher Experience and Teacher Years Using SID*

<table>
<thead>
<tr>
<th></th>
<th>Teach Experience</th>
<th>Teach Sid Years</th>
<th>ApTotal Chg</th>
<th>AcSuccess Chg</th>
<th>AcProduct Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>1.0</td>
<td>0.619(**)</td>
<td>-0.009</td>
<td>0.08</td>
<td>0.032</td>
</tr>
<tr>
<td>Coefficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teach Experience</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.84</td>
<td>0.087</td>
<td>0.494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Teach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>-0.009</td>
<td>0.095(*)</td>
<td>0.065</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Teach Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.095(*)</td>
<td>0.848(**)</td>
<td>0.935(**)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
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<tr>
<td>ApTotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>0.08</td>
<td>0.042</td>
<td>0.032</td>
<td>0.065</td>
<td>0.163</td>
</tr>
<tr>
<td>Coefficient</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Chg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.848(**)</td>
<td>0.935(**)</td>
<td>0.975(**)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>AcSuccess</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>0.032</td>
<td>0.065</td>
<td>0.935(**)</td>
<td>0.795(**)</td>
<td>1.0</td>
</tr>
<tr>
<td>Coefficient</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Chg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.163</td>
<td>0.975(**)</td>
<td>0.975(**)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
<td>457</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
One significant correlation was found as a result of this analysis (see Table 14). Years of experience with Shared Inquiry Discussion showed a weak correlation with the Academic Success sub scale, Spearman’s Rho statistic is .095 (p = 0.042).

Thus, based on this correlation, the null hypothesis, that there is no correlation, is rejected. It is concluded that there is evidence to suggest that there is an association between years of experience with Shared Inquiry Discussion and amount of change (before-after) in the Academic Success sub scale.

Data Summary

1. Shared Inquiry Discussion had a significant impact on teacher expectations as measured by the APRS and had a significant impact on teacher expectations in relation to two of the sub scales, Academic Success and Academic Productivity.

2. The findings showed that there was no difference between the types of Shared Inquiry Discussion model used. All models, Junior Great Books, Socratic Seminar or a combination of models were all equally beneficial.

3. Results indicated that there were several significant differences related to Shared Inquiry Discussion and demographic groups in this study.

   a. Related to student SES, teachers’ expectations increased more for low SES students using Shared Inquiry Discussion than medium SES students on the Academic Success sub scale.

   b. As years of experience using Shared Inquiry Discussion increased, expectations for Academic Success increased.
Chapter V

SUMMARY, DISCUSSION AND RECOMMENDATIONS

This chapter provides a summary of findings, a discussion based on the findings, and recommendations for practice and future research.

Summary of the Study

The primary purpose of this study was to investigate the impact of teacher use of Shared Inquiry Discussion (SID), an instructional process, on teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale) and demographic data. The process of SID requires many adjustments to teacher behavior, classroom management, and use of instructional materials. Primarily a literacy strategy, Shared Inquiry Discussion is used across subject areas and disciplines for students to make connections regarding the central concepts in any subject. The APRS was used because it allowed teachers to assess students in multiple classroom domains including, math, work production and literacy acquisition. The researcher sought to investigate whether the change in classroom instruction would cause a concomitant change in what teachers would expect from students as a result of their use of SID.

This research in teacher expectations was conducted in an area of inquiry that was rich in literature. On the whole, the available research in this area investigated the way teacher expectations impacted students and student achievement. As discussed in Chapters I and II, it has been clearly established that what teachers expect impact students (Good & Brophy, 2000; Kenealy, & Frude, 1991; KUBLinski & Weinstein, 2001).
However, there was little research available that investigated instructional strategies and teacher expectations; and further, the impact of these instructional strategies on teachers and teacher expectations. Good and Thompson (1988) noted that, "The possibility of changing normative practice was an area largely ignored by authors." And further that, "Ways to provide low-achieving students with exposure to new consent—and content recognized as important by students—would appear to be an important area of research" (p. 303). In addition, Padron, Waxman and Huang (2000) in their research on at risk students found that "Future research needs to explicitly test intervention models in which teachers try to alter instructional patterns and the learning environment of classrooms" (p. 78). Therefore, this study attempted to expand the body of knowledge in the area of what happens to teachers and their expectations when normative practice and curriculum opportunities for students change.

The teachers who participated in this study used Shared Inquiry Discussion as part of their instructional program. The sample included 30 classroom teachers, K-12, who taught in urban or suburban schools located in New York, Minnesota, Indiana, and Arizona.

Teachers submitted information about: years of teaching experience, years using Shared Inquiry Discussion, self-perceived level of expertise with Shared Inquiry Discussion, and finally the model of Shared Inquiry Discussion that was used (Junior Great Books, Socratic Seminar, or combined approach).

The study design was a cross-sectional one in which early in the school year the teachers completed the Academic Performance Rating Scale (APRS) for each of their students and then again in the middle of the school year.
Quantitative methods were used to describe and analyze the data. These methods included: (a) presentation of the descriptive data, (b) Wilcoxon Signed Ranks t-test to test differences between the pre and post administration of the APRS, (c) one-way analysis of variance (ANOVA) to compare the entire scale and its sub scales in relation to ordinal demographic variables, and (d) the Spearman’s RHO correlation matrix to analyze the continuous demographic variables.

Findings and Discussion

It should be noted that the results of this study should be interpreted with some caution, given the fact that student achievement data was not used in this study. Consequently, strong causal statements cannot be made at this time. Nonetheless, these results are important in response to studies that called for improved instructional practices that would impact teacher expectations, and by extension, student achievement. Ferguson (1998a) noted that, “It has been found that first grade teachers can learn enough about children in the first weeks of school to predict with some accuracy their rank order on examinations held at the beginning of second grade. Once set, teachers’ expectations do not change a great deal” (p. 278). Ferguson also asserts that one of the reasons for this is that, “The pace and style of standard teaching offer few effective opportunities for students who are behind to catch up” (p. 279).

Research question one asked whether use of Shared Inquiry Discussion impacts teacher expectations for student academic performance as measured by the APRS (Academic Performance Rating Scale). As shows by the descriptive data and the quantitative analysis, Shared Inquiry Discussion had a significant impact on teacher expectations as measured by the APRS. The mean score on the first APRS (65.7) compared to the second APRS (67.2)
after using Shared Inquiry Discussion changed significantly ($p = 0.008$). On the whole this intervention had a positive significant effect on teacher expectations for students.

The findings also demonstrated that Shared Inquiry Discussion also had a significant impact on teacher expectations in relation to two of the sub scales, Academic Success and Academic Productivity. The mean score on the pre Academic Success sub scale (23.2) versus the post Academic Success sub scale (23.8) showed a significant increase ($p = 0.015$). This scale is related to classroom performance outcomes, such as academic achievement and is “more strongly associated with CTBS (Comprehensive Test of Basic Skills CTB/McGraw-Hill, 1982) than the other scales” (DaPaul & Rapport, 1991, p. 288). The mean score on the pre Academic Productivity sub scale (42.6) versus the post Academic Productivity sub scale (43.6) showed a significant increase ($p = 0.020$). This sub scale, while sharing item overlap with the Academic Success scale was more closely related to the process of achieving classroom success, such as, completing work relative to classmates.

One of the major aspects of the literature review that this study sought to challenge was the relative stability of teacher expectations (Good & Brophy, 2000, Lee & Porter, 1990). The increase on the Academic Success sub scale, post SID, shows that Shared Inquiry Discussion is an effective instructional technique that changes the perception of teachers’ of students academically and may alter the “mental model” (Lee & Porter, 1990) constructed by teachers. Therefore the results of this study would be important to school districts, teachers and curriculum designers seeking ways to keep teacher expectations fluid and open to changes in student potential performance and best practices to raise academic standards.
The significant results on the Academic Productivity sub scale further support the intervention as a methodology that not only impacts teacher perceptions of students' academic achievement, but also teachers' perceptions of students' day to day work habits and classroom functioning. This result is important because teachers have naturally occurring expectations based on socioeconomic status, ethnicity, classroom behavior, and so forth (Good & Brophy, 2000; Jussim, Smith, Madon & Palumbo, 1998), that are relatively stable, and since these expectations were positively increased as a result of Shared Inquiry Discussion, there is evidence to suggest that teachers were now basing evaluations of students on student performance, rather than previously formed expectations.

These changes in teacher expectations can, in turn, have an impact on the cycle of self-fulfilling prophecy. Based on the model developed by Rosenthal and Jacobsen (1968), teachers notice changes in student performance. They, in turn, communicate these new expectations. Students respond positively to these new expectations raising student performance, therefore creating a cycle of self-fulfilling prophecy. While self-fulfilling prophecy effects have been found to be fairly small in general, they can be quite large for some ethnic and socioeconomic groups (Madon, Jussim & Eccles, 1992); and these effects can possibly accumulate over a period of years (Kublinski & Weinstein, 2001).

Research question two asked whether the Shared Inquiry Discussion model (Great Books, Socratic Seminar or Combined) impacted teacher expectations for student academic performance as measured by the APRS. An ANOVA was used to compare the scale and sub scales with the three models used in this study.

The results showed that there were no differences between the models of Shared Inquiry Discussion used. The average (SD) change in total score was -2.95 (13.0) versus 1.63
(14.9) versus 2.1 (10.3) for the JGB, SS and Com models respectively \( (p = 0.065) \). Since teacher expectations increased using Shared Inquiry Discussion, in general, according to the results from the first research question, it can be asserted that no one model caused the change and that all models, Junior Great Books, Socratic Seminar or a combination of these models were all equally beneficial.

This result was not surprising given the fact that the process, methodology and materials used are similar in all the models. However, since the \( (p = 0.065) \) value outcome approaches significance, at some future point a larger sample size may provide more information concerning differences between the models not found in this study.

Research question three asked whether student and teacher demographic factors impacted teacher expectations for teachers who use Shared Inquiry Discussion as measured by the APRS. An ANOVA was used to compare the scale and its sub scales to each of the demographic variables.

In comparing the APRS to student ethnicity, teacher expectations, for different groups of students on the whole scale, related to ethnicity, were not below the critical level \( (p = 0.577) \), indicating that the variances across groups were not significantly heterogeneous. This finding is supported by the only similar study found in the literature by Madon, Jussim & Eccles (1997) where student ethnicity did not impact teacher expectations.

In comparing the APRS to student socioeconomic status, the Academic Success scale, in relation to socioeconomic status was significant \( (p = 0.03) \). The post hoc analysis showed that teacher expectations for low socioeconomic students increased more than for medium socioeconomic students \( (p = 0.02) \).
This finding was surprising. The literature to date is abundant with studies that show teacher expectations for low socioeconomic students are generally lower than they are for medium or high socioeconomic students (Ferguson, 1998a; Good & Nichols, 2001). There are also numerous studies that show that at-risk students are more often impacted by teacher expectations (Baker, 1999; Good & Brophy, 2000; Padrón, Waxman & Huang, 1999; Pianta, 1998). Consequently this finding was promising and supports the theoretical perspective of this study, that the process and outcomes of Shared Inquiry Discussion triggered teachers to see students in new and positive ways. These traditionally underserved groups of students are given voice using this instructional practice and teachers respond to these new insights in ways that changes their perception. Recent research also supports the necessity for teachers to utilize different, more responsive instructional techniques, to reach at risk populations (Hamre & Pianta, 2001; Stuhlman & Pianta, 2002) because these students rely on relationships with teachers and possibly peers more than other groups. For some students the social interactions that occur in the classroom either motivate or hinder engagement in the curriculum. Baker (1999) found that “achievement is enhanced by high expectations for students coupled with a classroom climate characterized by encouragement and support” (p. 58).

Shared Inquiry Discussion promotes positive teacher-student and positive student-student interactions and closes the gap between the student and the curriculum and “serves as a bridge between those issues which are compelling to a student and the academic issues which lie at the foundation of most curricula” (Strong, 1996 p. 135).

One possible reason for this result also could be that the process of Shared Inquiry Discussion asks teachers to model and expect student behaviors that emphasize mutual
respect, active listening and thinking. Value is placed not on the right answer but on careful examination of the text. These SID processes parallel what Good and Brophy (2005) and Resenthal and Rubin (1978) propose are ways for teachers to communicate positive expectancy behaviors and high expectations, by providing more wait time, providing an atmosphere of acceptance and rigor, and so forth. This is further supported by research that shows that students respond to positive expectancy behaviors with increased motivation and effort, thus influencing teacher expectations for them (Good & Nicholls, 2001). According to Brophy (1999), “Only the brightest and most dedicated students will experience the satisfactions and acquire the application potentials that are inherent in school earning opportunities unless we do a better job of building these outcomes into our instructional goals” (p. 80).

A second reason is that the instructional components of Shared Inquiry Discussion closely align with research in expectancy-value theory (Eccles, 2002). The amount of effort students give to a task is determined by and how much he/she expects to be successful and how much he/she thinks the task is important. Thus, the powerful combination of rich academic content, goal-oriented discussion and a climate of acceptance that the use of Shared Inquiry Discussion provides give teachers and students the necessary conditions for increased expectations in the classroom.

The correlation analysis that sought to compare the continuous variables between years of teacher experience and years of experience with SID supported the previous findings discussed and indicated that as years of experience using SID increased, expectations for Academic Success increased ($p = 0.042$). This finding suggests that the more experienced teachers become using Shared Inquiry Discussion, the more they will expect their students to
achieve academically. This suggests that experience using SID may create a positive
accumulated self-fulfilling prophecy effect as postulated by Madon, Jussim & Eccles (1997).

Recommendations for Practice

1. While this study did not focus on pre-service teachers, the results showed that
increased experience with SID was beneficial; therefore early training would be important to
encourage flexible expectations.

2. Teaching this approach at the university level and through in-service would broaden
the exposure to practicing teachers.

3. This practice would be important to incorporate in general staff development for
teachers in every subject area. Shared Inquiry Discussion can be used in virtually every
discipline.

4. Training for administrators, quasi-administrators and staff developers in conjunction
with teachers would be critical for the support and accountability required to successfully
implement this strategy within individual schools.

5. Incorporating Shared Inquiry Discussion into curriculum documents would also
ensure that stated goals and content are consistent with training.

6. Coordinate the use of appropriate texts for Shared Inquiry Discussion with curriculum
mapping efforts to produce a coherent core curriculum.

7. Provide time on a consistent basis for teachers to discuss appropriate SID texts and
share experiences in use.
Recommendations for Future Research

1. This study would be made richer by adding student achievement data, interview data and classroom observations that might better triangulate information correlating the teacher perceptions with actual achievement data.

2. Conduct a quasi-experimental study where one group engaged in Shared Inquiry Discussion curriculum is compared to a control group.

3. Examine specifically student response variables operate within the context of Shared Inquiry Discussion and academic achievement.

4. Many of the subjects in this study were from urban schools, therefore, a broader cross section of suburban teachers might provide richer data.

5. Investigate, using a larger sample size, if the model of Shared Inquiry Discussion would yield differences and include a sufficiently large sample size of participants using each model to draw more informed conclusions.

6. Extend the time of the first and second survey administration or have beginning, middle and end administration of the survey, to determine if longer use of SID has greater impact on teacher expectations.

7. Include sample groups that used Touchstones Discussion, one of the SID models not represented in this study.

8. Conduct a longitudinal study to investigate if there were any accumulated self-fulfilling prophecy effects for at risk groups.

While Shared Inquiry Discussion is primarily a literacy strategy, the teacher behaviors that are learned are not limited to literacy. This researcher would also propose that the use of Shared Inquiry Discussion would impact other areas of teaching as well. As the
methodology and teacher behaviors become internalized, teachers' approach to any type of
discussion or interaction with students across content areas would also be impacted.

Consequently, the researcher believes that the questioning techniques, the suspension of
judgment and acceptance of multiple viewpoints spill over into general teaching practice.
While further research in this area is warranted, support for this is found in the fact that the
APRS asks teachers to make global assessments in many academic areas, in math, classroom
interactions and functioning as well as literacy and therefore the impact of SID in other areas
of teaching may have occurred.

Although the design of this study did not allow for causal relationships to be asserted,
the theoretical hypotheses underlying were confirmed. Shared Inquiry Discussion is a
powerful instructional strategy that merits serious consideration for those in the field of
education.


Appendix A

ACADEMIC PERFORMANCE RATING SCALE
ACADEMIC PERFORMANCE RATING SCALE

For each of the items below, please estimate this student's current performance over the past week. For each item, please circle one choice only.

1. Estimate the percentage of written math work completed (regardless of accuracy) relative to classmates:
   - 0-49%
   - 50-69%
   - 70-79%
   - 80-89%
   - 90-100%
   | 1 | 2 | 3 | 4 | 5 |

2. Estimate the percentage of written language arts work completed (regardless of accuracy) relative to classmates:
   - 0-49%
   - 50-69%
   - 70-79%
   - 80-89%
   - 90-100%
   | 1 | 2 | 3 | 4 | 5 |

3. Estimate the accuracy of completed written math work (i.e. percent correct of work done):
   - 0-49%
   - 50-69%
   - 70-79%
   - 80-89%
   - 90-100%
   | 1 | 2 | 3 | 4 | 5 |

4. Estimate the accuracy of completed written language arts work (i.e. percent correct of work done):
   - 0-49%
   - 50-69%
   - 70-79%
   - 80-89%
   - 90-100%
   | 1 | 2 | 3 | 4 | 5 |

3. How consistent was the quality of this child's academic work over the past week?
   - Consistently Poor
   - More Poor Than Successful
   - Variable
   - More Successful
   - Consistently Successful
   | 1 | 2 | 3 | 4 | 5 |

4. How frequently does the student accurately follow teacher instructions and/or class discussion during large-group (e.g., whole class) instruction?
   - Never
   - Rarely
   - Sometimes
   - Often
   - Very Often
   | 1 | 2 | 3 | 4 | 5 |

7. How frequently does the student accurately follow teacher instructions and/or class discussion during small-group (e.g., reading group) instruction?
   - Never
   - Rarely
   - Sometimes
   - Often
   - Very Often
<p>| 1 | 2 | 3 | 4 | 5 |</p>
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<th>Question</th>
<th>慢</th>
<th>较慢</th>
<th>平均</th>
<th>较快</th>
<th>极快</th>
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<tr>
<td>8. How quickly does this child learn new material (i.e., pick up novel concepts)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>9. What is the quality or neatness of this child's handwriting?</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Above Average</td>
<td>Excellent</td>
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<tr>
<td>10. What is the quality of this child's speaking skills?</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Above Average</td>
<td>Excellent</td>
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<tr>
<td>11. What is the quality of this child's reading skill?</td>
<td>Poor</td>
<td>Fair</td>
<td>Average</td>
<td>Above Average</td>
<td>Excellent</td>
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<tr>
<td>12. How often does the child complete written work in a careless, hasty fashion?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
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<tr>
<td>13. How frequently does the child take more time complete work than his/her classmate?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
</tr>
<tr>
<td>14. How often is this child able to pay attention without you prompting him/her?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
</tr>
<tr>
<td>15. How frequently does this child require your assistance to accurately complete his/her academic work?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
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<tr>
<td>16. How often does the child begin written work prior to understanding the directions?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
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<tr>
<td>17. How frequently does this child have difficulty recalling material from a previous day's 'lessons'?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
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<tr>
<td>18. How often does the child appear to be staring excessively or 'spaced out'?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
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<tr>
<td>19. How often does child appear withdrawn or tend to lack an emotional response in a social situation?</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
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Appendix B

HISTOGRAMS OF SAMPLE GROUP
Histograms of Sample Group

B-1 Teacher years of experience with Shared Inquiry Discussion

B-2 Teacher level of expertise with Shared Inquiry Discussion
B-3 Teacher years of teaching experience

B-4 Shared Inquiry Model used by numbers of students
B-5 Ethnicity of student sample by group

Students ethnicity

Frequency

0 50 100 150 200

Black Hispanic Asian ME/NA White Other

B-6 Socioeconomic status of student sample by group

Students socio-economic status

Frequency

0 50 100 150 200 250 300

High Med Low
Appendix C

RELIABILITY AND VALIDITY TABLES FOR APRS
Reliability and Validity Tables for the APRS using study data

**Reliability**

**Warnings**
The covariance matrix is calculated and used in the analysis.

**Case Processing Summary**

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A Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

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**Item-Item Correlation Matrix**

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The covariance matrix is calculated and used in the analysis.
Reliability

Warnings
The covariance matrix is calculated and used in the analysis.

Case Processing Summary

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(a) Listwise deletion based on all variables in the procedure.

Reliability Statistics

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Inter-Item Correlation Matrix

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The covariance matrix is calculated and used in the analysis.
Reliability

Warnings
The covariance matrix is calculated and used in the analysis.

Case Processing Summary

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a Listwise deletion based on all variables in the procedure.

Reliability Statistics

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Inter-Item Correlation Matrix

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Reliability

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