PSYCHOMETRIC ANALYSIS OF THE ELEMENTARY EXPERIENCE SCALE
AND ITS PREDICTABILITY OF ELEMENTARY LITERACY SCORES

by

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Dedicated to all who helped me believe, "I think I can."

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"No man is an island,

Entire of itself,

Every man is a piece of the continent,

A part of the main…"

– John Donne

No man *is* an island, and I certainly cannot claim that this dissertation study was developed entirely through my own means. I need to express my sincere gratitude to all involved in the process, both directly and indirectly. Thank you to my dissertation chair and advisor, Dr. Kim. He had me under his wing for over a year, patiently guiding me through the necessary processes and offering support every step of the way. He taught me many things, and helped me to realize that perhaps numbers are not my enemy after all. Dr. Elleman is the only committee member from whom I had the priviledge of taking a course from, therefore her positive influence in my research began long before this paper. Thanks to Dr. Rust as well, who gladly accepted being a part of my journey and offered his invaluable expertise whenever needed. Thank you to my first grade students who inspired me to develop an insatiable quest for knowlegde and persevere through the tough times. Lastly, thanks to my family and friends. You too have experienced my ups and downs, prayed for me, offered a listening ear, and helped me remember: "Education is a journey, not a race."

ABSTRACT

The development of an Elementary Experiences Scale (EES) was necessary to measure parents' perception of their own school experiences since limited validated tools were available for this type of informative evaluation. It was hypothesized that parents' perception of schools, negative or positive, could have a negative or positive effect on their students' progress in school. A pilot study using the EES found it to predict the variance in student literacy scores. In order to further validate the EES, parents of elementary students in an entire district including students in grades kindergarten through fourth grade were offered the opportunity to participate in a survey about their personal school experiences. The 461 parents who completed the EES had their responses totaled and compared to their students' literacy scores. Socioeconomic status (SES) of the parents was also taken into consideration. Results found that the EES had a strong reliability index (alpha = .95), but did not significantly predict student reading achievement on the literacy scores. The EES and SES combined predicted kindergarten letter naming fluency scores and letter sound fluency. The EES and SES levels combined also predicted fourth grade MAZE assessment scores. ThinkLink and TCAP literacy scores were not significantly predicted. When controlling for reported levels of SES alone, SES did significantly predict the variance in student literacy scores for all grade levels combined on AIMSweb in fluency measures (CBMs) and comprehension measures (MAZE assessments). In fact, the higher the SES, the more the

variance in the students' literacy scores was able to be predicted. The EES was analyzed with both classical test theory and item response theory and found to have a strong one factor solution in each analysis. These findings suggest validation of the scale's use in evaluating parents' elementary school experiences. Further research on the influence of the EES in predicting students' early reading progression should be conducted. This dissertation also highlighted the importance of promoting family literacy practices in the schools in order to help promote students' literacy success through collaboration between schools and families.

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LIST OF ABBREVIATIONS

CBM – curriculum based measure of oral reading fluency

CLS – correct letter sounds

CRC – category response curve in item response theory

CTT – classical test theory in the field of psychometrics

CVC – consonant vowel consonant pattern in closed syllable English words

DIBELS – *Dynamic Indicators of Basic Early Literacy Skills* assessment

EES – *Elementary Experience Scale*

EFA – exploratory factor anaylsis

GRM - Samejima's (1969) Graded Response Model in IRT

ICC – item characteristic curve

IIF – item information function

IRT – item response theory in the field of psychometrics

LNF – letter naming fluency

LSF – letter sound fluency

NWF – non-sense word fluency

OCC – operating characteristic curve

ORF – oral reading fluency

SES – socio-economic status

SOMPA – *System of Multicultural Pluristic Assessment*

TCAP – *Tennessee Comprehensive Assessment Program*

WR – words read in fluency assessment

WWR – whole words read in psuedo word assessments

CHAPTER I: INTRODUCTION

Overview

It seems that the movement to reform education has been around since the hour following formal education's conception. That being said, the continual cycles of pedagogical reform have not always been regarded as a negative aspect of the culture of education (Kessinger, 2011; Shannon, 2012). Simply put, every profession must move forward based on research findings for best practice in order to make progress in the field (Walsh, 2007). These reforms mandated by law in the United States have had an effect on early literacy practices in the schools (National Reading Panel, 2000; Stewart, 2004).

Striking changes to American pedagogical practices have included many vested school stakeholders, which include national political figures, state and district officials, policymakers, administrators, educational practitioners, and even students (Newman, Deschenes, & Hopkins, 2012). Nevertheless, one very valuable stakeholder in the education equation was often times completely overlooked. The students' families were not always considered when making instructional decisions.

Evidence has shown that sometimes families purposely leave themselves out of the schools due to fear, apathy, anger, career obligations, or confusion on their important role (Griffith, 1998). Other times, schools are responsible for the pushback of students' families due to safety concerns, frustration, and convoluted schedules (Levine, 2002). It has been argued that parents are not as

involved as they should be in education because of schools' failure to recognize parents as their most valuable resource, especially in initiating and maintaining student progress (National Opinion Research Center, 1997). The school can seem like a fortress in which no adult may enter without wearing an employee name badge. School districts need to realize that parents are the first and best teachers of their children (Morrow, Mendelsohn, & Kuhn, 2010).

Certainly, families may be contacted if there is a major reoccurring problem with a student behaviorally or academically. Contact may be initiated for parent-teacher conferences, too. Rarely, however, are these attempts truly about involving the families in the schools in an in-depth manner and seem to end up no more than cursory efforts on the school's part.

Moving Forward

While reform has had its place in the education system, policymakers in the field should consider a return to the basics of school and community partnerships. Leaders in the school should strive to rekindle families' and schools' affiliation with one another (Stevenson & Baker, 1987). The spirit of unity embraced in community schools has diminished over time, but the value of including and welcoming parents back into the classroom walls is impetrative (Walberg, 1984; Wong, 2012). Darling (2004) states, "…further development of this network which includes families, educators, training institutions, policymakers, and researchers, is crucial to the vitality of family literacy in the coming years" (p. 603). Research illustrates the beauty of a parent-teacher

partnership, and benefits ensue for everyone involved in quality literacy programming (Ames, de Stefano, Watkins, & Sheldon, 1995; Chance, 2010; El Nokali, Bachman, & Votruba-Drzal, 2010; Frew, Zhou, Duran, Kwok, & Benz, 2012). Discussion concerning what specifically denotes quality family literacy programming occurs in-depth in the next chapter's review of relevant literature.

The available research on families in the schools, while vast, is lacking strength of evidence in a few areas. One purpose of this research was to help contribute to the field of knowledge about family literacy practices. The advantages of getting families' input and assistance with topics such as reading (Imperato, 2009; Padak & Rasinski, 2006), writing (Dunsmore & Fisher, 2010), and storytelling (Moll, Amanti, Neff, & Gonzalezm, 1992) have been documented. Unfortunately, less has been discovered in evidence as to why some families would avoid the schools' extra curricular activities, especially events that involve literacy practices.

One theory as to why adults are not as involved in schools is because of their workloads (Anderson & Minke, 2007). The American family today is busy outside the home without added educational pursuits. According to the Bureau of Labor Statistics (2012), adults in the United States are working more jobs for longer hours than they did a decade ago. Fewer parents are staying home with their children, and with today's technological advances families seem distracted and tied to work even during their leisure time. However, parents must have insight into how important of a role they play in their children's education, both

inside and outside the school walls. The missing link in the research is answering the question, "What truly prevents parents from getting involved in the schools?" Answering this question effectively would help schools prevent disparity between students' home lives in comparison to their formal academic environments.

Research in the Field of Family Literacy

The poem by John Donne (1988) reads, "No man is an island." The same can be said of the educators that have established themselves as the leaders in their classrooms all around our world. What the great instructors already know is that they cannot remain oblivious to the world around them. They must reach beyond the classroom walls to incorporate the community and traditions of students into their curricula in order to have the most fulfilled and effective results from their teaching efforts. Building a home to school connection is essential for any educational establishment.

One problem in the field of educational research is the lack of validated survey tools for family literacy measurement. Effective methods for bridging the gap students may encounter from their home to school environments cannot occur until there are instruments available for measuring parents' perceptions. These perceptions affect parents' involvement in the schools.

Currently, there are very few quality tools that can be used in the field for adequate measurement of parents' opinions about schools. Medinnus' (1962) Attitude Toward Education Scale, although outdated, is one of the only surveys

found that judges adult perceptions of school experiences. It was not well authenticated, or proven reliable, in the sole documented implementation that involved 68 first grade parents in one school. The 40 items used in the scale included questions about: 1) parent's attitude about their own school experiences; 2) parent's support of the school in discipline, policy, administration, and finance; and 3) the parent's evaluation on the importance of education. The responses were scored on a 4 point Likert-type scale ranging from strongly agree to strongly disagree. Medinnus combined his scale's scores with a survey the classroom teacher filled out with her own opinion regarding the parents' attitudes towards school, too. Lastly, "…the scores on the test were related to the socio-economic level of the family and to the educational level of the parent" (Medinnus, 1962, p. 101).

The results indicated the split-half reliability of Medinnus' scale to be .90. The scales' scores were found to be related to the educational level of the parent, socio-economic level of the family, and the teacher's observed rating of the family's attitude towards school (Medinnus, 1962). It was thought that the scales' results could be used by educators to help guide discussion about areas parents were displeased with in the school or that the scale could be used by school administration to examine school policies through a parent's perspective. A final discussion point of interest from the Medinnus study was that the influence of one parent's perspective may not effect a student as heavily or at all

if that parent is not the dominate figure when assisting with homework and other school-related matters (p.102).

      An investigation of one scale is certainly not enough to validate that parents' perspectives of schools have influence on their students. New research questions in the field necessitate that a variety of research methodologies are employed. The need for more diversity in early childhood literacy research methods has become growingly apparent. Past researchers in the field have employed many qualitative forms of research (Dunsmore & Fisher, 2010). Ethnographical studies are one widely used form of qualitative research in family literacy and are appropriate for family literacy practices because they follow the participants in their homes and record findings over a period of time (Moll, 2000). If educators are going to model and form their reading practices to help families, ethnographical studies are important in knowing where the families are coming from and how to seamlessly incorporate the home literacy practices into classrooms. As important as the contributions of qualitative research are to family literacy studies, they should certainly not be the only methods used.

      On the other side of the research spectrum, quantitative studies can seem very arbitrary and inappropriate for evaluating our youngest learners at times, especially when the goal is to evaluate a family's knowledge about reading and lead educators in utilizing these findings to reach struggling students (Moll, Amanti, Neff, & Gonzalez, 1992). Using quantitative data in family literacy research is not all negative, though. Compton-Lilly (2010) noted that one positive

aspect about quantitative studies previously conducted in early childhood literacy arena is that they have been useful in evaluating student academic success, especially in longitudinal comparison studies. The downfall is that few studies have emerged from the body of educational research using quantitative research to demonstrate parent knowledge about literacy or to illustrate a parent's perspective of schools.

One useful method for researchers to engage in is to conceive qualitative questions for a survey and administer it to the parents. The responses can be converted to a quantifiable scale with the resulting parent responses evaluated for significant data trends or other findings. These quantitative methods can be advantageous to use in family literacy research for several reasons. Quantitative strategies are easier to reproduce accurately due to their general straightforwardness and explicit directions for implementation, for example, when giving standardized tests. Quantitative studies are more generalizable than qualitative research. One instance of this would be with the use of case studies. The sometimes obscure populations or environments used in case studies are difficult to duplicate accurately on a large scale. This makes the results less applicable to a larger and more diverse set of participants. Lastly, when it comes to conducting a concise study, using quantitative methods can be a good starting point. This is because quantitative research can be used to gather preliminary data promptly. These results can be reinvestigated in a mixed-methods design if additional forms of research are constituted, too. Important factors can be

highlighted early on from the quantitative data, paving the way for further qualitative investigations, such as interviewing the participants (Gall, Gall, & Borg, 2007; Wallen & Fraenkel, 2001).

The Context

Bridging the gap between home and school is the true goal of incorporating family literacy into a curriculum. Students, teachers, and parents should not feel like they are treading the sometimes desolate territory of teaching and learning alone. An educator equipped with the funds of knowledge from a student's family heritage and home life can truly provide a foundation for formatting authentic literacy lessons in the classroom (Moll, Amanti, Neff, & Gonzalez, 1992). Parallel literacy practices help to build a stronger school community when students are free to share openly about their customs and family traditions at school and also share with their families what they have been immersed in during school hours.

When family literacy is implemented properly in this circular path, the school truly feels like a home away from home for the students and the gateway for future success is open for all to travel. Morrow, Mendelsohn, and Kuhn (2010) indicated that getting parents into the schools is the first step to a dynamic community connection. However, there are few research studies that have been conducted that indicate what can happen if an adult caretaker has a negative attitude toward their own early educational journeys and what effect that may have on their own child's learning progression (Zellman & Waterman, 1998). As

mentioned, Medinnus (1962) saw the need to develop a scale for determining parent attitude toward education, but the results left much to be validated in the single experiment. This current study researched a scale similar to Medinnus that measured parents' attitudes toward their own elementary education experiences. The developed scale was psychometrically validated by utilizing both classical test theory (CTT) and item response theory (IRT). Once the scale was validated, this study also incorporated an added component of predicting students' early literacy skill scores with parents' scores from the scale. It was hypothesized that the positive or negative educational experiences the adults had when they were in school could possibly be passed down to their children's attitudes towards school, and therefore their students' literacy progress in school. An investigation was necessary to see if past school experiences varied in the adults surveyed. The survey scale and its discovered data could be of use in future family literacy programming. The long-term goal was to further break down any resistance or animosity towards schools that adults may have based on their past school experiences. More research tools were needed in the field of family literacy to help successfully accomplish this goal.

Development of the Elementary Experience Scale

During the development of the Elementary Experience Scale (EES) by the researcher, six overarching categories emerged from the research in the field of education that indicated some possible effect on a person's overall elementary school experience. The six areas include: parental support, social and emotional

well-being, teachers and staff at the school, curriculum and assignments given, student organizational skills, and general attitude towards elementary school.

An exploration of the literature in the areas of early childhood development and elementary school research provided a pathway for the creation of question items. Although there were limited studies discovered that discussed the actual development of a parental experience scale, question topics were first taken into consideration based on Medinnus' (1962) questionnaire. His questions for the parents about their school experiences included topics of teacher efficacy, student organization (e.g. "I never could seem to get to school on time." p.101), and overall value and importance of acquiring an education. It should be noted that at the time this scale was developed, parents using Medinnus' scale might have reflected on their own educational choices of whether or not to remain enrolled in school since it was not uncommon for students to finish their own educational pursuits after the eighth grade in order to work to help support their families. Laws for compulsory school attendance beyond the eighth grade depended on the state's policy and were not always well enforced, especially with the exception of a family hardship when children were needed as laborers (Imber & Van Geel, 2004).

Since student organization related questions were mentioned in Medinnus' scale, time was spent examining what the literature reported in regards to the influence of student organizational skills on their educational experience. Researchers have discovered that academic success is not the only factor in

educational experiences that can have a huge impact on a child's future (Howell,

Sulak, Bagby, Diaz, Thompson, & LaNette, 2013). Planning, organization, and

time management are skills fostered in the classrooms, too, since they are areas

known to be predictive of later success in school (Meltzer, 2010). If a student

cannot focus, is unorganized, turns assignments in late, or simply cannot process

the demands and structure of a school day, he or she is likely to have a poor

school experience. Weak early development in organizational traits has been

shown in cognitive neuroscience to be related to problems in early reading

acquisition abilities as well (Cartwright, 2012). Considering the above

information, items related to organizational efficiency in school were also

included on the EES.

Teacher and staff influence on the school experience is certainly one area

that could not go overlooked. Leadership in the school influences the teachers,

and teachers influence the students (Clark, 1980). Administrators are in charge

of overseeing the curriculum and instruction in the school and making certain it is

being delivered efficiently (Hallinger & Heck, 1996). Rivkin, Hanushek, and Kain

(2005) determined that effective teachers can have a large impact on student

achievement and school experience. What happens when students and teachers

are not very compatible? At the elementary school level few opportunities are

available to change teachers (e.g. most elementary school settings include self-

contained classrooms for all subject areas), so the student and teacher

relationships may have had a huge impact on parents' overall elementary school

experiences. Taking these research findings into consideration, having parents recall positive or negative characteristics about the staff members of their elementary school during implementation of the EES was necessary.

Social-emotional development has long been documented as a determining factor in early childhood student success (Biggar & Pizzolongo, 2004). If a child does not have enough to eat, is not clean, or does not have any friends, this certainly could affect his or her ability to focus on school practices. Bagdi and Vacca (2006) reported that social and emotional well-being are literally the, "building blocks for early learning and school success" (p. 145). Kindergarten academic readiness has been also correlated to social-emotional maturity and confidence (Denham, Way, Kalb, Warren-Khot & Bassett, 2013). It was even discovered that preschoolers' social-emotional outcomes could be used to predict the same third graders' abilities in the school setting (Merita, 2013). For these reasons, a section of social and emotional related question items were developed for the EES.

Since the EES was being implemented in comparison to student literacy scores, areas of academics and curriculum were investigated for question development as well. Boyle and Mistrett (2009) uncovered that the greatest predictors in early childhood education for later success for students were in their educational foundation skill mastery. Both areas of math and reading were named as important in laying the groundwork for confident future achievement in school. Children who attended preschool were found to have a greater chance

at success in elementary school because of being exposed to the foundational

principles at an earlier age than those students who did not attend (Sheehan,

1991). Feeling like one is thriving or drowning in the classroom can certainly

effect one's perception of their elementary school experiences, too, and ten

questions pertaining to academic subject areas were developed for the EES.

Research confirming parents' possible influence on their child's

educational success is reported extensively throughout this paper. Evidence has

suggested that parental support, or unfortunate lack thereof, can help make or

break a student's educational achievement opportunities (Rich, 1985). The EES

would not have been complete without including items that analyze how involved

the parents taking the survey thought their parents were during their own

schooling. Child rearing practices have been know to be modeled and passed

down from generation to generation, so parent effect on school experiences had

to be taken into consideration on the EES, too (Peterson, Smirles, & Wentworth,

1997). Parents, school staff, student organizational skills, social and emotional

stability, and attitude towards academic subject areas were all shown in the

research literature to have some possible effect on students' overall elementary

school experiences and therefore questions about each of these topics were

included for item development for the EES. A few summative or overall

experience questions were included in the summary as well, accounting for all 59

items developed for initial analysis of the effectiveness of the EES in evaluating

adults' past elementary school experiences.   Almost ten questions for each of

the six categories were created and were to be answered on a five-point Likert-type scale by parents or guardians. Appendix A provides a list of each of the scales' statements under their original category headings.

Pilot Study Using the Elementary Expereinces Scale

A pilot study was conducted using the Elementary Experience Scale (EES) shortly after its conception. The initial research experiment completed a psychometric analysis of the scale establishing its reliability through the item analysis of the questions developed. The pilot study's research question involved comparing parents' survey responses to the literacy achievement scores of their children. The experiment took place in a suburban school district involving two schools' first grade samples with approximately 260 families being sent the initial information.

Each family received a letter detailing the specifics of the project and the method for participation if desired. Parents who decided to sign the Informed Consent Form for the research were sent an email link to participate in the online survey of 59 questions related to their own elementary school experiences. Questions are listed in the Appendix. A total of 41 parental guardians participated in the study and agreed to have their students' mid-year Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002) scores compared to the survey data. According to the specified protocol requirements for DIBELS' first grade mid-year benchmarking, two main test categories and five sub-categories were given and used for evaluation scores in this study.

Nonsense Word Fluency (NWF) was a main category with Correct Letter Sounds (CLS) and Whole Words Read (WWR) as the two subcategories. During NWF's one-minute test, pseudo CVC words (e.g., raj, noc) were listed for students to decode aloud. A score was calculated for both CLS and WWR. The reason pseudo words were used was to accurately assess the true decoding abilities of students when encountering unfamiliar words rather than their ability to word-call memorized sight words.

Oral Reading Fluency (ORF) was the second test domain with Words Read (WR), Accuracy, and Retell as the three test subcategories (Rouse & Fantuzzo, 2006). This one minute fluency measure recorded the number of words read, how many were read correctly, and students' ability to recall what was read. Additionally, a composite score was tallied for each student that included all of the tested categories' combined scores.

After the computation of basic descriptive statistics, Exploratory Factor Analysis (EFA) was conducted on the data set in order to extract a common factor and high factor-loading items. The EFA analysis revealed that almost every item had high factor loading on the single extracted factor, therefore a clear single factor solution emerged accounting for 50.49% of the variance of parents' survey responses. In order to confirm the single factor solution, Cronbach's alpha was computed. The computed Cronbach's alpha on the remaining survey items revealed a strong reliability index of 0.97.

Once high factor-loading items were selected, multiple regression analysis was performed to predict children's reading achievement (DIBELS) scores utilizing parents' EES scores. Results indicated that the EES was a significant predictor of student reading achievement scores for CLS, $F(1, 40) = 4.26$, $p < .05$, $R^2 = .10$ and for WWR, $F(1, 40) = 4.28$, $p < .05$, $R^2 = .10$ in the nonsense word fluency subtests. The EES did not significantly predict any of the reading fluency outcomes for the mid-year assessment. It is hypothesized that the fluency outcomes were not significantly predicted by the EES since it was the first time the students had participated in a standardized fluency measure, which could cause some discrepancies in true ability and actual test results. The scale did, however, predict the overall composite scores of the students, $F(1, 40) = 4.05$, $p = .05$, $R^2 = .09$. The Pearson's r value for all correlated literacy scores is 0.3, which indicates a small, but present, correlation between the students' tests and the parents' experience scale scores. The overall statistical findings suggest some validation of the scale and its use in predicting the effect of parents' elementary experiences on their students' early reading progression.

The EES pilot study's findings also support the need for family literacy practices in the schools. If parents had a negative elementary school experience, their perception may negatively influence his or her child's educational journey. Why would parents want to be involved in a school if they do not feel comfortable in the environment? The EES evaluates parents'

perceptions of their time in elementary school and can be used as a screener for potential parental involvement problems in a student's family.

The major limitation of this pilot study included a small sample size. The lack of statistical analysis power prevented the yield of significant results from the data. Since this was the first time the scale was administered, further investigation with the larger sample size is warranted. Only first graders' literacy scores were used and this was especially limiting considering it was the first implementation of the fluency tests for this group of students. Additionally, survey participants were gathered from only two schools and not administered on a large enough scale to adequately generalize the research findings to other schools in the district and beyond.

Regardless of the small size of the pilot study, implications for future studies using the EES are great and were set in motion by the contribution of the first study's results. If parents' past elementary school experiences are correlated with their students' current literacy scores, this may help support the need for family literacy practices in the schools. Additionally, if the survey is administered to a greater number of parent participants, more in-depth statistical analysis can occur to further validate and refine the effectiveness of the questions used in the EES survey.

Purpose of the Current Study

The purpose of this research study was to compare parents' perceptions using the Elementary Experiences Scale (EES) to students' academic

performance in literacy. The literature review discussed previous research

conducted in the field of family literacy. Both a validation of the current practices

and dissemination of effective methods for creating a community-like atmosphere

in the schools were outlined. Statistical research methods were also debated in

the literature review since they were used in the research design. Specific to this

study's experiment, a psychometric evaluation of the EES was conducted in

order to investigate the reliability of the scale's use in family literacy research.

Chapter 3 of this dissertation outlined the details of the experimental process

used. After the experiment, the results and implications for future studies were

discussed in the remaining two chapters of this dissertation. The end goal of

validating the EES was to justify family literacy practices in the schools while

providing an applicable tool for conducting future research. If negative parental

school experiences were noted with the EES, educators could have used this

data to intervene in repairing the home to school rapport for the benefit of the

students.

Given the previously conducted study using the EES, predictions were

made for the future use of the scale in a new study. A second experimental

investigation of the EES was implemented with far more participants. This

enabled a better validation of the EES by allowing a more in-depth statistical

analysis of its use with Item Response Theory (IRT). The scale was also being

used with different schools and a wider range of student grade levels than the

first experiment. Complete demographic information of the experiment is

provided in the methods section. The current study's purpose included the following research questions:

1. Will the EES show the one factor solution through exploratory factor analysis (EFA)?

2. Will the same survey questions that indicated high factor loading scores in the pilot study show up as significant contributors in the results of the second study?

3. Will CTT and IRT show the same pattern for the strength and weakness of each item?

4. Will the parent score prediction outcome vary when using different grade levels to investigate during this second study?

5. What specific literacy scores will be predicted by the survey (e.g., letter naming, letter sounds, Curriculum Based Measures (CBM), MAZE, ThinkLink, or TCAP scores).

6. Will the socio-economic status (SES) of the parents be a significant factor when predicting student literacy scores?

Delimitations

The following delimitations were determined necessary to help answer the study's research questions in a timely manner. Only one school district in the middle Tennessee area was contacted for the study. The district level officials' expertise about appropriate elementary literacy assessments made this district a prime location for the study to take place. Consideration was also given to the

ease of accessibility to the pre-existing literacy scores through digital databases.

A grand total of ten elementary schools were involved in this district-wide study.

It should also be noted that the district used during the research contained only

urban schools.

Surveys were collected in February of 2014 and administered to parents

via an online link. Student literacy scores were acquired only if their parents

completed the entire survey. Students' literacy assessments had already taken

place in January of 2013, however, the TCAP test scores used were from April

2013. Informal assessments conducted by classroom educators were not used

for the purpose of this study. Literacy scores were the only type of test scores

compared with the parent survey results and only grades kindergarten through

fourth were considered in this research. The time frame, location, grade levels,

and type of assessments used for this research were each considered necessary

boundaries in completion of the research. It is understood that the delimitations

may have detracted from the extent of the study's generalizability.

Limitations

Limitations are a part of every study, and this research was certainly not

without some of its own confines. The results of the on-line survey may have

been skewed if parents taking the EES had trouble using computer technology or

if they could not read the questions asked of them in English, as there were no

read-aloud or translation options. The results could have been distorted as well if

the parents did not have a clear memory of their own school experiences and

instead projected their students' elementary school experiences as their own. Heredity of reading disabilities passed down from parents to children was another limitation in the literacy scores of some of the participants and was noted by the researcher. The homogenous sample of participants from one school district may have negated the generalizability of the results to a greater population of parents and students. The same was true for the types of literacy data available for the students in the one school district used. Data from the EES was limited to adults who decided to participate in the study and who were able to access a working computer or smartphone device with internet connection. One last limitation noted is that parents had to be somewhat involved in their child's educational pursuits to have even considered taking the survey. Therefore, perhaps only more readily involved families participated in this voluntary study, creating less variance in the calculated results.

Key Term Definitions

When considering the topics discussed in this dissertation study, the following key terms are of importance to the reader and aide in deciphering the study's purpose and meaning.

- *Benchmark assessment* – A test that is given in the same or similar format at least twice if not three times a year to show student progress in a particular academic area over time and can be used to help highlight specific areas of deficiency in student progress.

- *Comprehensive assessment* – A test that measures a full battery of academic areas instead of just one small type of knowledge for an individual student and usually covers a year's worth of skill gained. For example, a comprehensive literacy assessment may cover phonics, vocabulary, comprehension, and grammar instead of only involving reading fluency measures.

- *Curriculum based measure* – A universal outcome measure of a student's progress in one specific area of academic content.

- *Early literacy* – Literacy practices that take place in a young child's home or school environments, usually referring to children ranging in age from a toddler to no older than third grade. Early literacy skills lay the foundation for later, more complex literacy competencies.

- *Emergent literacy skills* – Similar to early literacy, however, this is referring to the precursors to being a good reader rather than actual reading skills, such as print concepts, alphabetic principal, etc.

- *Educational practitioners* – Those educators in the classroom currently using teaching techniques with students.

- *Exploratory factor analysis* – Method used in statistical analysis to help reveal relationships between variables, especially when using a large amount of data.

- *Family literacy practices* – Families' own reading, oral language, and written techniques passed down from generation to generation, or the act of families working in cohesion with the schools to gain valuable literacy help for their children to use at home.

- *Fluency* – In literacy, oral reading with accuracy and appropriate intonation, however, most standardized fluency assessments only measure words per minute and accuracy rates.

- *Item Characteristic Curve* – In Item Response Theory this is the line correlating the trait measured and the participant's response, or the probability that the correct answer will be given in relation to the participant's capabilities.

- *Latent trait theory* – Also know as Item Response Theory, indicates that a test or questionnaire is not evaluated on the test as a whole, rather through individual defining characteristics or items.

- *Letter naming fluency* – Students are timed for one minute to see how many letters in random order they can name regardless of lowercase or uppercase format and print style differences.

- *Letter sound fluency* – Another early literacy indicator assessment timed for one minute where students have to actually say the letter sound for each presented letter.

- *Literacy* – Anything pertaining to written or spoken language which includes reading and listening to others speak and read.

- *Parent attitudes* – Parents' perception toward their child's school or their own personal school experiences.

- *Parent involvement* – Level of parent or guardian participation in school related activities at home with students or involvement by participation in school-based events.

- *Pedagogy* – A teacher's philosophy and theories used when employing instructional techniques in his or her classroom.

- *Stakeholder* – Someone who has a vested interest in the discussed topic or decision being made in the schools.

- Statistical test theories – Methods ranging from classical testing theories to more modern item response theories to analyze validity and reliability of test or scale constructs.

Summary

Limited knowledge has been disseminated about parent's elementary school experiences. The lasting consequences of those experiences, good or bad, may be projected onto the current elementary students in the hallways of today's schools. Since parents' attitudes towards their own school experiences are theorized to play a part in current school involvement levels, further research should be conducted to better confirm or deny this hypothesis. The EES was developed for this purpose. Though a preliminary study was conducted using this tool, more was left to be determined about the reliability and validity of the scale and its effectiveness in predicting literacy skills.

There are four remaining chapters in this report. Chapter 2 presents a literature review of both family literacy practices and psychometric testing theories. Chapter 3 outlines the methods and procedures that were used for this study. Data analysis is presented in Chapter 4 after the experiment was conducted. Chapter 5 discusses the results and direction for future studies. Lastly, this research concludes with a list of references and appropriate ancillary materials in the appendices.

CHAPTER II: A REVIEW OF THE LITERATURE

Importance of Family Literacy

According to Low (2011), "If children do not enjoy reading in school and do not read outside of the classroom, there will be an impact on their potential achievement both in literacy and across the curriculum" (p. 8). This is why family literacy opportunities can prove to be so valuable for students. Family literacy itself can morph into many different variations, but typically has to due with some kind of literacy activity being completed in the home or school environment, such as reading a book together (Leseman & de Jong, 1998).

Early childhood family literacy practices, or lack thereof, have been found to be related to later reading success or difficulties for students once they enter formal schooling (Jordan, Snow, & Porche, 2000; Senechal & LeFevre, 2002; Sonnenschein & Munsterman, 2002). Parents need to be empowered in their abilities to sustain student progress at home and trained in ways to help foster the most vital early literacy skills (Bird, 2005; Lynch, 2009; Skouteris, Watson, & Lum, 2012; Swick, 2009).

Bennett, Weigel, and Martin (2002) found that there was a significant relation to the Family as Educator theoretical model when compared to student language and literacy outcomes. The Family as Educator model was originally developed by researchers Snow, Barnes, Chandler, Goodman, and Hemphill (1991) about parents being literacy role models in the home to the students. The

two most important components of the model in Bennett el al.'s study included

the parents' developmentally appropriate beliefs about reading to their children

and the types of literacy activities taking place in the home.

Additionally, students who enter the school system from families of low

household income or from a non-native language speaking family have shown

exponential gains and benefits from family literacy intervention programming in

particular (Zaman, 2006; Zhang, Pelletier, & Doyle, 2010). The evidence in early

childhood literacy practices suggests schools and families must form a

partnership in the beginning of a child's educational career for the best interest of

everyone involved. But how does one begin this process?

Meeting in the Middle

One could assume that as long as there have been families, there have

been family literacy practices being passed down from generation to generation

as part of the deeply rooted traditions of society. Unfortunately, the home to

school disconnect has grown exponentially over the last few generations as each

of the two camps are almost pitted against one another (Petty, 2011). It seems

that, ". . . current conventional wisdom tells us that 'many parents just don't care

anymore.' Teachers decry this condition by announcing, 'If parents did a better

job parenting, we teachers wouldn't have such a difficult time teaching,"

(Shockley, Michalove, & Allen, 1995, p. 4).

Needless to say, repairing the rapport between educators and families can

be a slow and arduous process. However, with any major reform there should be

a starting point. Just as teachers should not perform their daily tasks as "an island," the student should not be made to feel like they are utterly isolated and alone at school. Incorporating traditions from the home environment into the classroom provides access to the background knowledge that can ignite a child's learning process. Velez-Ibanez and Greenberg (1992) refer to this tapping into students' prior knowledge or family traditions as the "funds of knowledge" (p. 313). If educators collect adequate research on the backgrounds of their students, they will be able to access these so-called funds of knowledge for their own classroom's benefit and also to the success and delight of their students. Getting the family involved is the key. Again, numerous research articles provide evidence that students whose families participate in reading practices at home have a better rate of success in literacy related outcomes than students whose families do not take an active role in their child's education (Christian, Morrison, & Bryant, 1998; Epstein, 2001; Smith, 2010).

Family Literacy Nights

One method for getting parents involved in their child's education is through the implementation of family literacy nights at the schools. During these events parents are invited to collaborate with educational specialists about the most effective literacy methods to practice at home with their students (Sink, Parkhill, Marshall, & Norwood, 2005). Many times the parents are willing and able to help their child become more successful in school through added practice.

The issue preventing home literacy practice is that parents do not always feel confident in their knowledge to assist at home. Family literacy nights can help break down the barrier of school and home relationships and provide a better foundation for consistent reading practices conducted within the school and at the student's home environment. When families are provided with an easy-to-follow example of literacy activities to engage in at home and time to practice with educator support, they are more likely to continue such methods at home with their students (Greene & Anyon, 2010).

Providing a cohesive reading platform for the students to practice reading at both home and school can result in more success for the young readers. This is the true goal of any family and school program, such as the family literacy night initiative. Chance (2010) supports this thought by stating that the major objectives for schools hosting family literacy nights should be to, "entice parents into the school so they can become comfortable with an educational system that may be unfamiliar to them [and] give parents time to help their children read and be successful in school" (p. 10).

Study Groups

Building once again upon the idealization that no man is an island and therefore should not be alone in the education process is the family literacy initiative known as study groups. Since the arduous process of decoding a text that is foreign in both language and background knowledge can result in

frustration and failure of proper comprehension by the student, study groups may provide a support system for struggling readers.

As was also true of literacy nights, the study group strategy can enable parents to truly benefit from having one-on-one time with educators while learning strategies for helping students' success. This success is possible through parents practicing literacy methods to initiate at home first (Douville, 2000). Parents need direction on exactly what they can do at home to be effective. According to Allen (2007), once appropriate literacy methods are established, study groups can be comprised of a variety of pairings (e.g. older and younger generations, siblings, or neighbors). Having study group bonding time, no matter the pairing, has been shown to be an effective means of communicating and showing support for one another, all while developing necessary literacy practices through shared knowledge (Frey, 2010).

When teachers have had time to work individually with the families, some stereotypes and barriers to communication that may have been present before the meetings seem to dissipate, thus opening the floor for both parents and educators working together in the best interest of the student. Reading researcher Moats (1999) indicated that teaching reading is as difficult as 'rocket science' even for highly trained educators. So, naturally, it would be beneficial to provide parents with initial training in the methodologies for helping foster student success, especially since these can vary per individual student or grade level.

Journaling and Narrative Experiences

Journaling and oral language opportunities offer other avenues in which to approach family literacy as well. Shockley, Michalove, and Allen (1995) found that it was best to let the families take the lead in how they wanted to incorporate writing journals into their home to school literacy practices once they initiated the routine with their students. After the writings were recorded in the journals, educators could then tweak their instruction for the individual needs of the students and their families. On the other hand, when it comes to narrative skills, the traditions of story-telling are found to be almost innate in regards to many family traditions that have been passed down from generation to generation (Beals & Snow, 2006; Lapp, 2010).

While current mainstream trends in literacy stress the importance of written language being the focus during family bedtime routines, some researchers have looked at the significance of oral narratives shared in classrooms with the students who come from households where story books were not a natural resource (Roser, 2010). Since written language is not valued or practiced as often in these students' homes, it only makes sense that the educator would want to explore oral language options in the classroom when tackling the literacy skills necessary for academic success (Chavkin & Gonzalaz, 1995; Heath, 1983). The independence and confidence that can grow from being successful in literacy by building onto the skill set that comes natural to the

students from their home experiences make both the journaling and narrative

methods straightforward, simple, and useful options for the classroom.

Home Visits

Breaking down the barriers between the classroom and the community

may begin with an educator getting comfy on a family's couch during a

household visit. Think of how awkward a parent must sometimes feel

surrounded by the rigid brick and mortar that comprise the school building. Why

not begin gathering data about what the family is accustomed to doing in their

time together by meeting them on their terms? Educators can arrange for a

home visit to put themselves in the foreign location rather than persuading

parents to step foot inside of their classrooms. Moll, Amanti, Neff, and Gonzalez

(1992) view these occasions as essential for setting up the opportunity to gather

the exact funds of knowledge that one would need for curriculum lessons when it

comes time for educators to develop classroom literacy lessons. Moll et al.

further suggest, ". . . a combination of ethnographic observations, open-ended

interviewing strategies, life studies, and case studies. . ." (p. 132) can be

employed when undertaking the task of gathering useful data from the homes of

the children that the educators are serving.

Parent Tutoring

Fishel and Ramirez (2005) compiled 24 studies about parent involvement

in the schools and found that the most effective form of parent interaction with

their students in the studies they reviewed was when the adults reported working

one on one with their children in the home on a specific and targeted area of weakness. Tutoring could include something as basic as looking over schoolwork or assisting with homework. Tutoring could also develop into an afterschool session at home with greater complexity, but this would be dependent upon the time available and the specific expertise of the parent helping.

Powell-Smith, Stoner, Shinn, and Good (2000) found some individual student gains during their parent tutoring study involving literacy outcomes, but no significant gains overall in student reading achievement were found. This may have been due to the limited length of the study. Parent tutoring is an involved process if it is to be completed effectively. Surprisingly enough, all too often, parents' motivation level for assisting his or her student is linked to the family's socioeconomic status (Green, Walker, Hoover-Dempsey, & Sandler 2007; Stevenson & Baker, 1987). Since parental educational attainment and family incomes are directly linked according the U.S. Bureau of Labor Statistics, parents may have limitations in their own background knowledge when it comes to tutoring their own students (U.S. Bureau of Labor Statistics, 2013). This reason is why outreach programs in the schools are essential to offer support to parents.

Story Talk

Fain and Horn (2006) highlight the idea of families practicing literacy techniques in their first language and embracing linguistic diversity instead of

denying it. Literature circles with family members can be formed to discuss critical themes in books read aloud in dual-language texts, too. Essential comprehension techniques are being engaged in an authentic manner. Both the parent and child feel comfortable because neither is out of their element. Journaling techniques can be used as a follow up to the book discussions. Parents or other more mature family members can contribute to the journaling if the child is too young to engage in writing a script. The adult can always lead the writing of the manuscript while students of almost any age can at least add to the writing by contributing a relevant illustration. The number of emergent literacy techniques modeled by the families in this scenario are numerous and include, but are not limited to, encoding and fluency methods. However, the unspoken benefit that students are being exposed to during story talk is a love of literacy in their own households. Backpacks or some other form of designated bag can be used for easy transportation of the books to and from school (Rowe & Fain, 2013).

A final idea building upon the topic of story talk is for teachers to invite a guest of one of the students to be a storyteller for the day (Levine, 2002). Students may embrace this type of literal home to school connection as their relatives step into the classroom. This method provides opportunity to fuse a student's literacy skills seamlessly with his or her home life since the topic of discussion would be directly related to the student's heritage.

Bridging Barriers

Even though the ideals of family literacy programming may sound enticing, they can unfortunately be easier said than done (Hendrix, 1999). Harris and Goodall (2008) bring up the point that, "schools rather than parents are often 'hard to reach,'" indicating that school officials need to be more open minded to what information they can gain from the families instead of the other way around (p. 227). Gaining a shared acceptance of one another in literacy practices can be extraordinarily difficult, especially where language barriers may be present (Compton-Lilly, Rogers, & Lewis, 2012; Farver et al., 2012; Wong, 2012).

Typical problems in family literacy programming can range from the small to the extreme, such as transportation problems for the families or even participants feeling that they are being judged as an outsider by the school personnel (Grace & Trudgett, 2012). According to Timmons (2008), there is also hardship on the research end of family literacy studies due to funding, recruitment, and authentic participation. When teachers try to involve parents but receive little to no responses back, it can be exasperating and educators may give up their efforts after a few failed attempts. Attrition of participants is found to be a reoccurring issue noted in the family literacy studies as well, which can affect both research and efficiency of the programs being initiated. The bottom line is that families are not going to attend where they do not feel welcome and the programs offered should be worth their time (Levine, 2002).

Families with young children seem to have so many responsibilities that could be deemed valuable to their everyday lives, and it is no surprise that some of them may be considered more valuable to a family's current life goals than literacy practices being implemented in the home. Literacy programs in the community have to compete with many extraneous factors, but it is vital for planners of family literacy events to note these issues and be conscientious to the diverse needs of those they are serving. Being positive, considerate, and as flexible as possible in design is a good beginning to implementation of a successful program, but many times the events than can unfold are beyond anyone's control and these opportunities can provide both negative and positive experiences for all involved (Hilden & Jones, 2013). Remember, negative experiences can be molded into positive ones if participants work together and build upon growing beyond previous mishaps and work to rectify any miscommunication. In literacy practices and beyond, clear communication between all parties is key, but may require time and patience to develop (Hoover-Dempsey &Whitaker, 2010)

Obtaining Family Literacy Research Data

Different forms of both qualitative and quantitative methodologies have been used to measure family literacy effectiveness. One study used a survey about parents' involvement and how it affects children's development in literacy (Levine, 2002). Levine's study, however, measured the teachers' perceptions of the parents' involvement. Teachers reported parental involvement as very

important and listed additional methods in which they could initiate better involvement through newsletter communications and invitations to visit the classroom.

While not investigating literacy outcomes specifically, Stevenson and Baker (1987) measured school performance of children based on family-school relations through a quantitative analysis of pre-existing data. The data included transforming the mother's educational attainment level to a 7-point scale and comparing it to a teacher survey regarding parental involvement. This study confirmed that younger children had greater parental involvement than older children and parents who were more involved had themselves attained a higher educational status. Achievement was greater for students the more parents were involved (El Nokali, Bachman, & Votruba-Drzal, 2010; Stevenson & Baker, 1987).

Goldkind and Farmer (2013) examined the effect school size can play on parental involvement and found through statistical analysis that due to safety concerns, some parents may avoid school contact at larger schools. Vera et al. (2012) used survey data to determine specific barriers to the educational involvement of English learners. As is described above, a variety of research types have been used and are continued to be used in family literacy investigations, but the best methodology to employ really is dependent upon the specific nature of the investigation being conducted. Length of study, participant demographics, volunteers, access to literacy scores, tools available, and funding

are just some of the topics researchers have to take into consideration in this field when setting up projects of their own.

Summary of Family Literacy Research

Whether taking place in the school or within the homes of the students, the benefits of family literacy practices can significantly impact student progress. Through recreation of the home lives of students in the schools and evidence-based literacy practices filtering into the homes, the possible gains in literacy related constructs are great. Despite barriers such as parents' past negative school experiences, low socioeconomic status (SES) complications, or language differences, schools can work to foster an open and caring relationship with the students as well as their families. Parents are sending their children into the school doors daily and desire for their own beliefs to be preserved and their own diversity recognized and celebrated. Literacy provides an avenue to do just that. Family literacy practices can make or break a school's community bond and therefore academic success. Therefore, so much is yet to be learned from the field as to best practices to be initiated by the school administration and educator teams when it comes to family involvement success. Fortifying the bond between schools and parents could teach the schools more knowledge than they ever thought they could gain. Schools could gain a true sense of their students' needs and how to best address them alongside the parents for support. The variety of research methods used in the past for investigating literacy practices is beneficial for paving the road for future researchers' experiments.

Psychometric Theories

Psychometricians employ their expertise during the construction of testing instruments and validate those instruments' proper use in the field of psychology. As with the ever-transforming field of education, the practitioners in the field of psychometrics have experienced changes to the methodologies used in their area of accreditation as well. The major shift in the research has emerged from using classical test theory (CTT) to now utilizing item response theory (IRT) to analyze data findings in a research project (Hambleton & Jones, 1993). Of course, the reasoning behind this transfer in theories did not arrive without appropriate justification.

Classical Test Theory

Classical test theory (CTT) was first launched by Charles Spearman for psychologists to use over 100 years ago (Hambleton & van der Linden, 1982). CTT is now regarded in modern times as the lesser or weaker of the two models when compared to IRT due to several complications in applying the classical approach to test construction research (Hambleton & Jones, 1993). Allen and Yen (1979) state that, "classical true-score theory involves an additive model" (p. 60). Since scores cannot be both true and false, the equation involved in the structure of CTT has its complications from the onset. The CTT can be expressed as

$$X_{ip} = T_{ip} + E_{ip} \tag{1}$$

where, X_{ip} is the observed score for item i and person p, T_{ip} is the true scores for item i and person p, and E_{ip} is the error score for item i and person p. The tautology of the CTT model does not present a huge problem until it is actually used in psychology to interpret certain behaviors or phenomenon occurring in nature (Hambleton & van der Linden, 1982). The issue occurs in practice because a solution to a problem in nature cannot be both correct and incorrect.

Another limitation when using CTT is that the model does not account for the test taker's abilities, therefore the validation results could be skewed due to a person's ability to do well or not on a particular test (Hambleton, Swaminathan, & Rodgers, 1991). Thirdly, CTT only considers the test as a whole, and not individual items. In order to validate a test, psychometricians need to be able to examine information about each individual test item and can make necessary adjustments. The next dilemma of CTT is known as parallel test assumption. In this assumption, if the test administrator is giving a battery of tests, the tests should have identical true scores and error variances. This presents a very real predicament in practice considering it is not usually possible or desirable for the performance on two exactly same tests to be compared (Hambleton, Swaminathan, & Rodgers, 1991). Since the mentioned obstacles and even others have been noted when using CTT, its use is limited in test construction and validation. However, even with all of the issues concerning the use of CTT, it can at least be credited for paving the way for the current and more suitable strategies employed in test construction analysis today.

Item Response Theory

Thomas (2011) maintains that the most important point of interest when considering the use of IRT is it has the capability of differentiating the characteristics of the test itself from the test participants. The improvements to the quality of diagnostic methods that IRT employs is useful in eradicating many, if not all of the problems associated with the classical model (Hambleton, Swaminathan, & Rodgers, 1991). The basic 3-parameter IRT model can be described as,

$$P_i(\theta) = c_i + (1 - c_i)\frac{e^{Da_i(\theta - b_i)}}{1 + e^{Da_i(\theta - b_i)}} \tag{2}$$

> where $P_i(\theta)$ is the probability to get an item correct for given θ,
> θ is the latent trait (ability or proficiency),
> a_i is Item discrimination parameter,
> b_i is Item difficulty parameter, and
> c_i is pseudo-chance parameter.

The major benefit of IRT's innovation from which all of the other advantages stem is given away in its title, 'item response.' Calculations can be made to determine if the effect of each individual item on the test is valid (Thomas, 2011). This allows modifications to be made to a particular test item or a number of items to develop a better quality assessment in the intended area instead of tossing an entire test in the trash and starting from square one. Better assessment of the actual participant's abilities can be assessed as well, with the separation of the test items and the subject's participation. Additionally, IRT models have been shown to aide in the justification of non-biased test questions

if the researcher is looking to administer the test to various populations of

participants (Hambleton, Swaminathan, & Rodgers, 1991).

When the IRT process is used it can provide more in-depth information

overall with stronger assumptions than the formulas of CTT (Hambleton & Jones,

1993). For example, a single reliability is used in CTT, however in IRT there are

local reliabilities and therefore more opportunities for discovering complex

information about a developed test. CTT also has no invariance in parameter

estimates, but IRT assures that items are not found more and less difficult

simultaneously, regardless of the population used in a study (Hambleton &

Jones, 1993). This is certainly useful when deciding items to retain or delete

from a test.

Like CTT, IRT's formulas have assumptions that must be maintained. The

first main assumption of IRT is the idea of one common factor accounting for all

item covariance on the test. This means there is either unidimensionality- with a

single latent trait, or local independence- with a residual covariance of zero if you

extract the one common factor in two different items (Hambleton & van der

Linden, 1982). The second assumption is that there is a link between the latent

trait and the observed response to the test in what is known as an item

characteristic curve (ICC) (Thomas, 2011). This means that since the latent trait

is the occurrence being assessed, it should have an expected relationship with

the ICC. If graphed, the curve representing data found should correlate with the

type of test used. For one example, in testing reading comprehension, more should be understood as ability increases, thus illustrating a linear function.

Even though Lord began his research into the conception of his new theory in the 1950s, recognition of the theory was not well disseminated until about thirty years later when IRT was better introduced into to the world of psychometrics (Hambleton, Swaminathan, & Rodgers, 1991). The many palatable variations incorporating IRT into psychological studies have been utilized over the last decade as more knowledge is gained about the various situations where IRT would contribute both ideal and enlightening information to the test construction process (Hambleton & Jones, 1993). Dodd, De Ayala, and Koch (1995) said one such development is IRT's use in computerized adaptive testing (CAT), where test takers are presented with items based on their test performance during a live test session. The formulas of IRT first help score each test response as correct or incorrect. Next, a more difficult or easier test question from the available bank of questions is calculated. Lastly, the appropriate question is presented on the computer based on the test taker's current progress. This process continues for the duration of the test. The capabilities of CAT gives a more accurate depiction of an individual's scope of abilities when compared to the limited and finite set of questions that were used, for example, in the former paper and pencil versions of the Graduate Record Examination (GRE) (Educational Testing Service, 2013). Of course, IRT remains very appropriate for use in validating the construction and use of surveys as well,

which is why it is a top consideration of psychological experiments that have a significant number of participants (Hambleton & van der Linden, 1982). For IRT to be utilized effectively, the number of participants taking a measure should ideally total 300 or more (Embretson & Reise, 2000).

Polytomous IRT

Polytomous IRT is a methodology that can be used to analyze survey data specifically. Since surveys are not scored dichotomously, with only a right or wrong answer, a polytomous method must be employed. Saying that a scale or test is polytomous simply means it can be scored in multiple-ordered categories of three or more response options, making this type of analysis ideal for Likert-type scales' rating systems (Tang, 1996). One polytomous IRT example is Samejima's (1969) Graded Response Model (GRM). The GRM works on the assumption that responses are ordered, categorical, and local independence holds true for the tested items (Samejima, 1997). In this model the operating characteristic curve (OCC), or the chance of a participant's answer to a specific category, can be written as:

$$P_{ix}^{*}(\theta) = \frac{\exp[\alpha_i(\theta - \beta_{ij})]}{1 + \exp[\alpha_i(\theta - \beta_{ij})]} \tag{3}$$

where x = j = 1, 2, . . ., m$_i$, score,
α_i = common item slope parameter, and
β_{ij} = category threshold parameter.

For example of its practicality in use, one could develop a test with three response options on the beginning items and then change to four response

options for each question later during the evaluation. In Muraki's adaptation to

Samejima's model called the rating scale model (MRSM) the number of answer

choices should be kept the same throughout the scale in order for this type of

GRM to work effectively (Kline, 2005). Both models are labeled 'difference

models' since subtraction is used in the formula to obtain the chance of response

in an individual category (Dodd, de Ayala, & Koch, 1995). When considering the

actual probability of each category occurring using a GRM, the equation would

look as follows:

$$P_{ix}(\theta) = P_{ix}^{*}(\theta) - P_{i(x+1)}^{*}(\theta) \tag{4}$$

The probability of responding on or above the lowest category is P_{i0}^{*} = 1.0, and

the probability of responding above the highest category is P_{i5}^{*} = 0.0. Thus,

$$P_{i0}(\theta) = 1.0 - P_{i1}^{*}(\theta)$$
$$P_{i1}(\theta) = P_{i1}^{*}(\theta) - P_{i2}^{*}(\theta)$$
$$P_{i2}(\theta) = P_{i2}^{*}(\theta) - P_{i3}^{*}(\theta)$$
$$P_{i3}(\theta) = P_{i3}^{*}(\theta) - P_{i4}^{*}(\theta)$$
$$P_{i4}(\theta) = P_{i4}^{*}(\theta) - P_{i5}^{*}(\theta)$$

Dodd, de Ayala, and Koch's (1995) work in polytomous IRT confirms the use of

Samejima and Muraki's models and expanded their use to today's modern CAT

procedures mentioned earlier.

Summary of Test Theories

When using CTT, tests or surveys may only have one total score without

discrimination of individual items' effectiveness. This type of analysis gives

information about the test as a whole. The benefit of using IRT is that more can

be discovered about the appropriateness of each separate question. Using IRT

allows for intricate critiquing of newly developed tests with in-depth analysis

options (Van de Linden & Hambleton, 1997). These options can be particularly

beneficial in education when tests are being developed for curriculum and

instruction purposes. Behavioral or attitudinal surveys in psychology also benefit

from this type of analysis. A specific branch of polytomous IRT analysis called

the GRM is most appropriate for investigations of effectiveness of survey data

items with three or more answer response choices. Assumptions for all of the

IRT models include that of unidimensionality, or measurement of one type of

phenomena. The second assumption is local independence, which can be

stated, "The response to any item is unrelated to any other item when trait level

is controlled" (Embretson & Reise, 2000, p. 188).

CHAPTER III: METHODOLOGY

Participants

The only acting participants for this study included parents of elementary school students who consented to completing a survey that was developed to access parents' own elementary school perceptions and experiences. Students' scores were accessed based on their parents' willingness and agreement to complete the survey. No interaction with the students was made during this study. The online survey link was distributed to all parents who have a student currently enrolled in any grade level from kindergarten through fourth grade in the school district used. Only one survey per family was accepted for calculation purposes, and literacy scores were compared for a single student per family if parents have more than one student enrolled in the grade levels kindergarten through fourth grade. A request was made on the survey for the parent to list their youngest student that meets the qualifications in the grade level spans, since in research it is thought that parental impact on literacy is greater during the earlier years of school and may decline by the time the students enter the upper grades (Stevenson & Baker, 1987).

Parents. The parent participants were drawn from a school district in the central Tennessee area that is solely an elementary level district with enrolled pupils ranging in grade levels of preschool through sixth grade. Preschool students' parents were not selected for this study since there are no literacy test

scores in which to compare parent data at this time in the district. Additionally,

the fifth through sixth graders' parents were not be contacted for the following

two reasons: to reduce the number of parents who have students in multiple

grade levels and to focus only on the parents' influence on their children's literacy

acquisition during the early education years. Refer to Table 2 for more details

pertaining to the breakdown of how many classrooms there are per grade level

spanning kindergarten through fourth grade in the school district that was used

for this study.

School district. The eleven schools in this urban school district had a

total student population of just over 7,500 students. The only school in the

district excluded from the study was the one that served solely preschool

students. In order to ensure consistent test scores, only one school district was

used for the experiment. This created the grand total of 283 classrooms (see

Table 1). Participants involved in the study averaged about 20 families available

per classroom. This accounts for approximately 5,660 families with a student in

grades kindergarten through fourth who were initially offered the opportunity to

partake in the research.

Exclusions. Incomplete surveys were excluded from the study, with

specific details provided in the results section. Also any student data from

learners who may have moved and were new to the area's schools and therefore

did not have complete literacy scores available in the district's database were

Table 1

Number of Classrooms at Various Grade Levels

School	Kindergarten	1st Grade	2nd Grade	3rd Grade	4th Grade
1	7	7	6	6	5
2	4	4	3	3	3
3	7	7	8	6	6
4	3	3	3	4	3
5	4	6	6	6	6
6	5	4	4	4	3
7	9	9	9	8	7
8	6	6	6	5	5
9	5	5	5	5	5
10	9	9	9	8	7
Totals	59	60	59	55	50

Note. Students in 283 total classrooms had their parents or guardians contacted to take the EES.

eliminated. Finally, if a parent happened to contact the researcher and wish for

his or her responses to be excluded from the research after completing the

survey, his or her data was also excluded. No negative consequences or penalty

accrued due to withdrawal from the study. Self-withdrawn participants were

considered those who entered the survey link and either indicated that they did

not consent to the study or did not complete the survey in its entirety. Other than

the 136 self-withdrawn adult participants, all complete submitted data that could

be linked to student literacy scores was included in the analysis results. The

number of adult participants was predicted to be significantly less than the initial

number of families offered to take the survey, but the hope was that there were at

least 250 to 300 participants in order to have enough power in the statistical

analysis to validate the findings through IRT.

Participant demographics. Since all of the surveys were completed

online by one guardian in the families of the elementary students, the adult

participants' ages most likely varied greatly, but were not recorded for this

research project. Unlike the parents' age ranges, the elementary students whose

scores were used had a more consistent age range from about 5 to 10 years old

and student age was correlated to his or her assigned grade level. Both genders

of adult guardians were asked to take part in this study and no participant's data,

as mentioned above, was excluded unless a complete data set could not be

collected by the researcher. Again, only one member per family was asked to

complete the survey, and if parents had more than one student in the school

system, they were asked to list their youngest student for literacy score comparison purposes.

The majority of parents taking the survey were predicted to be females. The National Center for Education Statistics (1998) finds that mothers tend to be more involved with their children's educational practices than fathers and this statement supports the pilot study's participant findings of mostly female participation in the experiment as well. Over 90% of EES participants during this implementation were female, and more details regarding these findings are located in the results section. SES of the parent participants was gauged during data collection through self-reporting with Mercer and Lewis' (1977) ten-point SES scale entitled the System of Multicultural Pluralistic Assessment (SOMPA). The SOMPA scale rates SES through participants' selection of profession type for the head of their household and has been correlated with measures of school achievement for elementary students (Kamphaus, 1987). Refer to the EES in Appendix B to view the SES portion of the SOMPA scale in its entirety. Previous research has shown families with lower SES factors tend to benefit more from family literacy programming opportunities than families with higher SES (Hart & Risley, 2003). Therefore, the SES reported by the parents was an important component to investigate during this research.

Confidentiality. All parents who took the survey were assigned a participant number. No names of parents or students were reported for this study's purposes and all individuals' personal information was kept strictly

confidential. As far as student data involvement, student names were coded to

match their guardian's assigned participant number for confidentiality purposes

and students were not personally contacted during the research experiment.

Data was stored securely in a locked filing cabinet when not in use by the

primary researcher.

Materials

As mentioned above, an online experiences scale was administered to

parents in an urban district comprised of elementary schools. This process took

place through a link delivered in an email exclusively to parents in the school

district with a student enrolled in kindergarten through fourth grade.

Elementary Experience Scale (EES). The scale implemented in this

study was newly developed by the researcher due to the lack of available

measures that could be administered to convey accurate information about adult

guardians' own elementary school experiences. Refer back to the pilot study

information in chapter one for information on the development of the scale.

Possible responses to the scale's statements ranged from strongly

disagree, disagree, neutral, agree, and strongly agree. It should be noted that

questions varied in wording type from positive to negative statements. This was

in an effort to help avoid invalid responses from an adult participant by keeping

them alert and sensitive to the scale throughout the length of the questionnaire.

Even though the questions were initially developed in categories, once the scale

was administered, the questions were each distributed as random instead of

sequential categories. During analysis, items with negative statements had the scores reversed when the scales' items were scored so that all higher response scores indicated higher positive agreement with educational experiences. The computed Cronbach's alpha on the EES revealed a strong reliability index of 0.97 during the pilot study (Cronbach, 1951).

      Student literacy assessment measures. Students' pre-existing literacy scores from their mid-year AIMSweb and ThinkLink assessments and last year's Tennessee Comprehensive Assessment Program (TCAP) achievement tests were obtained from the school district's database with parent permission. The specific types of literacy data that were available at each grade level were contingent upon two factors: the type of tests that were developmentally appropriate and the time of year the students were being assessed.

      Kindergarten students had only had letter naming and letter sound fluency test data from their December 2013 AIMSweb assessments. This was the second benchmark of the year using these two measures in kindergarten, therefore students should have been familiar with the format of this oral, individual, and timed assessment given by their classroom teachers. First grade students also took their second benchmark assessment in December. However, they took a grade level specific curriculum-based measurement (CBM) that assessed reading fluency and a Maze, which is a comprehension-based assessment. Both test formats were being taken for the first time at this grade

level, so test anxieties or misunderstandings may need to be taken into

consideration in data results (Cassady & Johnson, 2002).

     AIMSweb assessments. The AIMSweb assessments administered for

grades one through four in this study included both a reading fluency passage

called a CBM and a Maze assessment. These were timed for one minute and

administered individually by the students' classroom educators. Fluency

passages were pre-leveled and read aloud by the student while checked by the

teacher for total number of words read correctly per minute. Accuracy

percentages were also obtained. Previous research has shown reading fluency

CBMs to have strong validity in measuring students' reading ability (Fuchs &

Fuchs, 1986; Hamilton & Shinn, 2003; Shapiro, Keller, Lutz, Santoro, & Hintze,

2006). "Test-retest reliability coefficients for reading CBM probes ranged from

.82 to .97, interrater reliability was .99, and the reliability coefficients for parallel

forms ranged from .84 to .96," (Shapiro et al., 2006, p. 24). As far as the Maze

assessment, according to website for AIMSweb (2013), "Maze is a multiple-

choice cloze task that students complete while reading silently. The first

sentence of a 150-400 word passage is left intact. Thereafter, every 7th word is

replaced with three words inside parenthesis. One of the words is the exact one

from the original passage" (AIMSweb, 2013, para. 3). This type of assessment is

used as an indicator of students' ability to use critical thinking processes when

reading in addition to the oral fluency passages administered to the students and

also has been shown to have high validity in assessing reading comprehension

abilities (Fuchs, Fuchs, Hamlett, & Ferguson, 1992). "Strong reliability indices of .86 to .91," have been found for maze-like assessments, depending on the implementation procedures and components (Parker, Hasbrouck, & Tindal, 1992, p. 213). Again, students in first, second, third, and fourth grades had the CBM and Maze AIMSweb sub-tests administered during the mid-year benchmarking process.

ThinkLink assessment. The ThinkLink assessment was also administered as a mid-year benchmark in every grade level in the study, excluding kindergarten. ThinkLink is a comprehensive multiple-choice test that can assess various subject areas for levels kindergarten through twelfth grade (Smith, 2006). ThinkLink's reading assessments have an overall median reliability of .85 when developers used a sample size of 6,104 students across six states in 2008. The validity of the questions used on the ThinkLink assessments is ensured using the Webb Alignment Tool (WAT). First, the tests items are evaluated for question appropriateness per state standards and then WAT enables the statistical analysis of previously used test items. Finally, Discovery Education (2006) maintains that experienced educators validate the question items' effectiveness as well. ThinkLink is intended to be a predictive assessment that identifies students' areas of core deficit and therefore enables educators to access the data and target weak areas in their students' test performance before the high-stakes assessments by the state department are administered.

Tennessee Comprehensive Assessment Program. One such high-stakes test is the Tennessee Comprehensive Assessment Program's (TCAP) achievement test. The timed TCAP assessment is criterion-based and multiple choice in its format. The paper and pencil format can be administered kindergarten through eighth grade and assesses language arts, reading, math, social studies, and science skills per grade level at the end of each school year in Tennessee (Tennessee Department of Education, 2013). Cizek (2007) provided information on the reliability of the Terra Nova (TCAP's pseudonym) to be in the .90 to .95 range on the test version administered to second graders. For the purposes of this study, only students' reading scores were considered and only fourth grade students had these scores returned from their third grade tests in time for the study's data analysis. In conclusion, the fourth grade students had the same three assessments as the first through third grade students with the CBM, Maze, and ThinkLink, but they also were the only grade level to have their 2013 performance on the reading section of TCAP taken into consideration.

Literacy data scoring. Refer to Table 2 for a listing of all the literacy tests administered to the kindergarten through fourth grade students in the district and a timeline of when they were given. The AIMSweb assessments were administered and the resulting data entered into the computer by the individual classroom teachers. The ThinkLink and TCAP tests were sent away with scores calculated according to each test company's protocols. Those scores were also on file in the district's records.

Literacy tests' validity. The literacy scores for each grade level that were selected by the researcher for student comparison scores were chosen for several reasons. First, the literacy tests were administered district-wide per grade level the same time of year to help validate consistency in implementation, and the results were already compiled for quick and feasible access before the school year's conclusion. AIMSweb assessment tools contain widely used and recognizable universal academic screeners, therefore, the research validated scores that these tests provided align seamlessly to the study's purposes (Shinn, 2012). Both the ThinkLink Assessment and TCAP were validated and widely recognized test formats, too, but these assessments provided a more comprehensive scope of the students' application of literacy abilities when compared to the mid-year benchmark test data provided by AIMSweb (Discovery Education, 2006; Tennessee Department of Education, 2013).

Procedures

Upon approval from the necessary agents to conduct the research, an electronic link to the EES was emailed to all parents in the district by the technology department at the district's central office. The email stated that the research opportunity was optional. Parental consent forms divulging the study's purpose and required elements had to be read and signed on the opening page of the survey before parents could proceed. If parents declined to consent, they were simply taken out of the survey and no data was recorded.

Table 2

Literacy Tests Administered Per Grade Level

Grade Level	Fall	Winter	Spring
K	LNF, LSF	LNF, LSF	LNF, LSF
1	PSF, NWF, TL	CBM, Maze, TL	CBM, Maze, TL
2	CBM, Maze, TL	CBM, Maze, TL	CBM, Maze, TL
3	CBM, Maze, TL	CBM, Maze, TL	CBM, Maze, TL, TCAP
4	CBM, Maze, TL	CBM, Maze, TL	CBM, Maze, TL, TCAP

Note. LNF = letter naming fluency; LSF = letter sound fluency; PSF = phoneme segmentation fluency; NWF = nonsense word fluency; CBM = curriculum-based measurement; TL = ThinkLink; TCAP = Tennessee Comprehensive Assessment Program.

Classroom teachers reminded the parents to look for the survey link being emailed and a fifty dollar Visa gift card was distributed to one parent participant at random. No individual incentives were guaranteed to those who decided to participate. The EES link was also advertized at after school family events in order to help obtain surveys from the demographic of parents who may not have heard about it otherwise. It should be noted that the EES link was able to be accessed from mobile cellular smartphone devices as well, enabling those without computer access to participate. Student benchmark literacy data had already been collected by the schools and entered into the appropriate AIMSweb and ThinkLink databases. The comprehensive TCAP literacy data that was collected from the previous school year was already on file with the district.

Data entry and coding. Data from the scale was collected over a two week time period after sending out the link. Scale results were entered into a data spreadsheet along with the acquired student literacy scores for statistical analysis. All negatively worded survey questions' scores were reversed for accurate comparison purposes of each question. As previously noted, the students' scores and matching guardians' scale results were assigned the identical numerical code to prevent confidential information from being distributed inappropriately and to correlate both student and parent data with one another.

Statistical analysis. All data was entered into the Statistical Package for the IBM SPSS version 20 for analysis. Means and standard deviations for each EES item were computed. Exploratory factor analysis (EFA) was also used on

the data set to detect survey items with low factor loading scores. Any survey

question with a factor loading score greater than 0.60 was selected for reanalysis

for validity purposes of questions used in the survey. The unidimensionality of

the scale's results were confirmed when all the question items with factor loading

scores greater than 0.60 pertaining to overall elementary school experiences.

This validated a majority of the variance being explained by the one factor in the

analysis results.

Next, item and test analyses using both CTT and IRT occurred. First, CTT

indices included investigating the frequency and percentage of each possible

alternative as well as item-test correlation. Then Cronbach's alpha was

computed. The computed Cronbach's alpha on the remaining survey items was

analyzed for a strong reliability index. Additionally, once EFA revealed a one-

factor solution, IRT analysis was performed on the data. The IRT analysis was

conducted using the statistical computer program called XCalibre and included

the following indices: estimation of location and slope parameters as well as item

and test information function for each literacy test (Gierl & Ackerman, 1996). A

table was produced illustrating the above IRT results.

Once the scale was calibrated and the strong items were selected, the

final step of the data examination involved regression analysis being completed

to predict various student literacy scores with the combined total of parents' EES

scores. Parents' EES scores were used as a predictor of their own students'

literacy scores. The results were considered for significant findings when

compared to each literacy assessment, varying per grade level.

CHAPTER IV: RESULTS

Preliminary Results

When the data collection process was closed for the EES, 612 participants had clicked on the survey and read the consent form, however, only 476 parent participants completed the survey in its entirety. The final number of 461 surveys used all had correlating student literacy scores available, otherwise the parent scale scores were deleted before statistical analysis. Even though parents' scale scores were complete, 15 students of the 476 had no student literacy scores for comparison to the EES available in the school district's database, and therefore had to be eliminated, thus the total valid participants were 461. Of the 461 parent participants who indicated their gender, 41, or 8.89% were male and 420, or 91.11% were female. There were participants from each of the ten schools in the district that were used for the study, with less participation from schools with student populations of higher poverty, indicated by free and reduced lunch qualification status of the students.

Grade levels for students were as follows: kindergarten had 121 parent participants which comprised 26.25% of the total; first grade had 122 participants, making up 26.46% of the total, there were 84 second grade parents, or about 18.22% of the total participants; third had 68 participants comprising 14.75%; and lastly, fourth graders' parent participation included 66 surveys, or approximately 14.32% of the participants.

Mercer and Lewis' 1977 SOMPA scale was used by the parents to indicate a professional level for their head of household when they were growing up. This was in order to provide a level for the SES anaylsis. The scale was weighted in a range from 1 to 10, with 1 indicating unemployment or the lowest level of income and 10 indicating the higest level of skilled worker and income. When the 461 participants indicated the SES level of their parents, only 12, or 2.98% indicated level 1; 17, or 3.69% indicated level 2; 22, or 4.77% marked level 3; 53, or 11.50% of the participants indicated level 4; 40, or 8.68% chose level 5; 58, or 12.58% selected level 6; 37, or 8.03% used level 7 to describe their family; 79, or 17.14% of participants picked level 8; 56, or 12.15% of participants selected level 9; and the largest number of participants indicated level 10, with 87 participants or 18.87%. Refer again to Appendix B for the full description of each professional level on the SOMPA. The reported SES results obtained from the EES participants were higher on average than that of the typical parents found in the overall school district. Each of the six initial research questions were investigated and the results are presented in the following sections. The first three questions are answered in the CTT and IRT analysis sections.

Classical Test Theory Analysis

Question one begins the analysis: "Will the EES show the one factor solution through exploratory factor analysis (EFA)?" All data were entered into the Statistical Package for the IBM SPSS version 20 for analysis. Frequency of

Table 3

Frequency, Descriptive Statistics, Item Correlations, and Factor Loadings

Item	1	2	3	4	5	M(SD)	Item-total r	FL
1	18 (3.90)	11 (2.39)	45 (9.76)	123 (26.68)	264 (57.27)	4.31(1.01)	0.42	0.44
2	17 (3.69)	60 (13.02)	58 (12.58)	138 (29.93)	188 (40.78)	3.91(1.18)	0.65	0.69
3	3 (0.65)	24 (5.21)	54 (11.71)	228 (49.46)	152 (32.97)	4.09(0.84)	0.61	0.66
4	22 (4.77)	81 (17.57)	113 (24.51)	176 (38.18)	69 (14.97)	3.41(1.09)	0.49	0.51
5	5 (1.08)	20 (4.34)	36 (7.81)	270 (58.57)	130 (28.20)	4.08(0.79)	0.36	0.39
6	2 (0.43)	3 (0.65)	2 (0.43)	124 (26.90)	330 (71.58)	4.69(0.56)	0.39	0.41
7	19 (4.12)	56 (12.15)	33 (7.16)	113 (24.51)	240 (52.06)	4.0(1.20)	0.53	0.56
8	3 (0.65)	3 (0.65)	13 (2.82)	171 (37.09)	271 (58.79)	4.53(0.65)	0.60	0.63
9	1 (0.22)	8 (1.74)	45 (9.76)	201 (43.60)	206 (44.69)	4.31(0.73)	0.60	0.65
10	3 (0.65)	24 (5.21)	54 (11.71)	228 (49.46)	152 (32.97)	4.09(0.84)	0.61	0.66
11	14 (3.04)	33 (7.16)	76 (16.49)	230 (49.89)	108 (23.43)	3.84(0.97)	0.44	0.45
12	2 (0.43)	22 (4.77)	26 (5.64)	197 (42.73)	214 (46.42)	4.30(0.81)	0.72	0.76

Frequency, Descriptive Statistics, Item Correlations, and Factor Loadings, Cont.

Item	1	2	3	4	5	M(SD)	Item-total *r*	FL
13	20 (4.34)	70 (15.18)	54 (11.71)	160 (34.71)	157 (34.06)	3.79(1.19)	0.59	0.60
14	19 (4.12)	75 (16.27)	95 (20.61)	169 (36.66)	103 (22.34)	3.57(1.13)	0.69	0.71
15	7 (1.52)	42 (9.11)	94 (20.39)	228 (49.46)	90 (19.52)	3.76(0.92)	0.69	0.73
16	8 (1.74)	26 (5.64)	25 (5.42)	180 (39.05)	222 (48.16)	4.26(0.92)	0.52	0.54
17	9 (1.95)	47 (10.20)	54 (11.71)	211 (45.77)	140 (30.37)	3.92(1.00)	0.40	0.41
18	6 (1.30)	30 (6.51)	74 (16.05)	230 (49.89)	121 (26.25)	3.93(0.89)	0.62	0.66
19	5 (1.08)	25 (5.42)	104 (22.56)	220 (47.72)	107 (23.21)	3.87(0.87)	0.49	0.52
20	2 (0.43)	5 (1.08)	21 (4.56)	202 (43.82)	231 (50.11)	4.42(0.67)	0.56	0.59
21	3 (0.65)	22 (4.77)	9 (1.95)	184 (39.91)	243 (52.71)	4.39(0.80)	0.50	0.53
22	17 (3.69)	60 (13.02)	84 (18.22)	209 (45.34)	91 (19.74)	3.64(1.05)	0.32	0.33
23	5 (1.08)	30 (6.51)	94 (20.39)	209 (45.34)	123 (26.68)	3.90(0.91)	0.72	0.76
24	9 (1.95)	24 (5.21)	50 (10.85)	204 (44.25)	174 (37.74)	4.11(0.93)	0.54	0.56

Frequency, Descriptive Statistics, Item Correlations, and Factor Loadings, Cont.

Item	1	2	3	4	5	M(SD)	Item-total r	FL
25	33 (7.16)	53 (11.50)	13 (2.82)	123 (26.68)	239 (51.84)	4.05(1.29)	0.34	0.37
26	3 (0.65)	12 (2.60)	32 (6.94)	246 (53.36)	168 (36.44)	4.22(0.74)	0.29	0.32
27	24 (5.21)	53 (11.50)	57 (12.36)	169 (36.66)	158 (34.27)	3.83(1.17)	0.75	0.78
28	3 (0.65)	9 (1.95)	106 (22.99)	180 (39.05)	163 (35.36)	4.07(0.85)	0.50	0.54
29	11 (2.39)	28 (6.07)	93 (20.17)	220 (47.72)	109 (23.64)	3.84(0.93)	0.43	0.45
30	28 (6.07)	73 (15.84)	100 (21.69)	173 (37.53)	87 (18.87)	3.47(1.14)	0.56	0.60
31	0 (0)	27 (5.86)	38 (8.24)	251 (54.45)	145 (31.45)	4.11(0.79)	0.48	0.51
32	1 (0.22)	15 (3.25)	22 (4.77)	246 (53.36)	177 (38.39)	4.26(0.72)	0.42	0.44
33	59 (12.80)	104 (22.56)	45 (9.76)	149 (32.32)	104 (22.56)	3.29(1.37)	0.49	0.51
34	5 (1.08)	15 (3.25)	132 (28.63)	180 (39.05)	129 (27.98)	3.90(0.89)	0.48	0.51
35	3 (0.65)	51 (11.06)	92 (19.96)	200 (43.38)	115 (24.95)	3.81(0.96)	-.059	-.05
36	15 (3.25)	45 (9.76)	40 (8.68)	192 (41.65)	169 (36.66)	3.99(1.07)	0.63	0.64

Frequency, Descriptive Statistics, Item Correlations, and Factor Loadings, Cont.

Item	1	2	3	4	5	M(SD)	Item-total *r*	FL
37	0 (0)	22 (4.77)	93 (20.17)	265 (57.48)	81 (17.57)	3.88(0.74)	0.59	0.62
38	5 (1.08)	21 (4.56)	33 (7.16)	194 (42.08)	208 (45.12)	4.26(0.86)	0.45	0.47
39	10 (2.17)	52 (11.28)	51 (11.06)	231 (50.11)	117 (25.38)	3.85(1.00)	0.50	0.53
40	1 (0.22)	11 (2.39)	108 (23.43)	252 (54.66)	89 (19.31)	3.90(0.73)	0.60	0.63
41	35 (7.59)	201 (43.60)	134 (29.07)	63 (13.67)	28 (6.07)	2.67(1.01)	0.13	0.13
42	82 (17.79)	181 (39.26)	58 (12.58)	101 (21.91)	39 (8.46)	2.64(1.24)	0.44	0.45
43	7 (1.52)	102 (22.13)	36 (7.81)	171 (37.09)	145 (31.45)	3.75(1.16)	0.24	0.25
44	4 (0.87)	6 (1.30)	32 (6.94)	198 (42.95)	221 (47.94)	4.36(0.74)	0.35	0.36
45	2 (0.43)	16 (3.47)	27 (5.86)	205 (44.47)	211 (45.77)	4.32(0.77)	0.66	0.70
46	6 (1.30)	50 (10.85)	34 (7.38)	208 (45.12)	163 (35.36)	4.02(0.99)	0.56	0.60
47	23 (4.99)	59 (12.80)	78 (16.92)	226 (49.02)	75 (16.27)	3.59(1.06)	0.38	0.41
48	4 (0.87)	10 (2.17)	25 (5.42)	224 (48.59)	198 (42.95)	4.31(0.75)	0.52	0.53

Frequency, Descriptive Statistics, Item Correlations, and Factor Loadings, Cont.

Item	1	2	3	4	5	M(SD)	Item-total r	FL
49	52 (11.28)	96 (20.82)	86 (18.66)	115 (24.95)	112 (24.30)	3.30(1.34)	0.75	0.78
50	33 (7.16)	167 (36.23)	105 (22.78)	114 (24.73)	42 (9.11)	2.92(1.12)	0.39	0.40
51	9 (1.95)	60 (13.02)	62 (13.45)	215 (46.64)	115 (24.95)	3.80(1.02)	0.52	0.53
52	6 (1.30)	14 (3.04)	58 (12.58)	217 (47.07)	166 (36.01)	4.13(0.84)	0.69	0.71
53	2 (0.43)	48 (10.41)	127 (27.55)	184 (39.91)	100 (21.69)	3.72(0.93)	0.33	0.33
54	2 (0.43)	19 (4.12)	80 (17.35)	238 (51.63)	122 (26.46)	4.00(0.80)	0.50	0.50
55	6 (1.30)	51 (11.06)	106 (22.99)	205 (44.47)	93 (20.17)	3.71(0.95)	0.64	0.66
56	7 (1.52)	34 (7.38)	98 (21.26)	243 (52.71)	79 (17.14)	3.77(0.87)	0.42	0.42
57	3 (0.65)	24 (5.21)	20 (4.34)	166 (36.01)	248 (53.80)	4.37(0.84)	0.52	0.53
58	22 (4.77)	64 (13.88)	60 (13.02)	191 (41.43)	124 (26.90)	3.72(1.14)	0.57	0.59
59	22 (4.77)	64 (13.88)	60 (13.02)	191 (41.43)	124 (26.90)	3.72(1.14)	0.57	0.59

Note. n = 461.

responses, means, standard deviations, Chronbach's coefficient alpha, and factor loading scores for each question for each EES item are listed in Table 3. Means ranged from a low of 2.64 for item 42 to a high of 4.53 for item number 8. Standard deviations ranged from 0.54 on question number 6 and up to 1.37 on question 33, but remained in a stable range overall.

Exploratory factor analysis (EFA) was used on the data set to detect survey items' factor loading scores. Factor loading scores had a wider range of limits with one negative value for item 35 at -.05, and the highest value being for item 27 with a factor loading of .78. The factor analysis on the survey question list resulted in a clear one factor solution with 30.12% of the variance explained by the first factor, and an eigenvalue of 17.77, confirming the one named contribution factor in the EES as being the impact of general or overall elementary school experiences. In order to confirm the single factor solution, Cronbach's alpha was computed. The computed Cronbach's alpha on the remaining survey items revealed a strong reliability index of 0.95. A single factor solution had to be confirmed before IRT analysis could begin.

Question two asked, "Will the same survey questions that indicated high factor loading scores in the pilot study show up as significant contributors in the results of the second study?" EFA results from the pilot and main study revealed similar results. During the pilot study, high factor loadings were considered to be .60 or above, and for the purpose of this study the range was cut off a little lower at .49 due to the data trends. Thirty-five items in the pilot study and 39 items in

the main study were found to have high factor loading scores through CTT. Only

five of the questions found in the pilot study (items 11, 17, 26, 32, and 42) were

not identified as highing factor loading scores in this study. It should also be

noted that questions 7, 16, 24, 31, 33, 36, 39, 48, and 58 were identified as

having high factor loading scores in the second use of the EES, but not the first.

Refer again to Table 3 to view the factor loading scores from this study. The

discussion section in the next chapter also elaborates more on the possible

reasons for these findings. Remember, most of the scores were found to have

high factor loadings in both studies, helping to indicate the reliability of the

questions asked on the EES since a high factor loading indicates stronger item

correlation to the overall factor being investigated.

Item Response Theory

Research question number three asks, "Will CTT and IRT show the same

pattern for the strength and weakness of each item?" Since there were enough

parent participants to confirm the strength and weakness of each item, IRT

analysis was conducted to investigate item parameter values of each item on the

EES with XCalibre software using the polytomous model with Samejima's (1969)

Graded Response Model. In the GRM, a is the item's slope, bs is the boundary

parameter, and item information function (IIF) is the inverse of the conditional

variance. Each one of these tells us something important about the item's

strength, weakness, and fit for the model. The a indicates how accurately the

item differentiates respondents with high proficiency from low proficiency. The bs

indicates where the categorical parameters are located. IIF tells us how

accurately the parameters are estimated (Samejima, 1969). See Table 4 for a

complete view of the IRT analysis and item parameter estimates for the EES's

items. Three items, 31, 35, and 37, did not converge with Samejima's GRM.

Item number 44 was the only item from the EES found to not fit the model at all

with a   ² of 43.02 and p = 0.03.

      A couple of items with stable category response curves (CRC) and high

IIFs are shown as Figures 1 and 2 and a couple of items with unstable CRCs and

poor IIF values are shown in Figures 3 and 4. First, item 12 was selected as a

strong item because of its consistent CRCs and high IIF. Its CRC and IIF are

further illustrated in Figure 1. The item parameters were: a = 1.61 and boundary

locations = -2.954, -1.807, -1.364, 0.133. The next example of a strong item is

pictured in Figure 2. Item 27's parameters were: a = 1.584, Boundary Locations

= -1.837, -1.117, -0.648, 0.520. Both item 12 and 27 have stable curve pattens

and high IIF values. The higher the IIF, the better, since the IIF represents the

inverse of conditional varience. Weak item examples begin with Figure 3, or item

number 22. Here item 22's parameters were: a = 0.424, Boundary Locations = -

4.762, -2.393, -0.951, 2.167. Last, item 44 also illustrates a weak fit of the GRM.

The item's parameters were: a = 0.551, Boundary Locations = -5.374, -4.373, -

2.706, 0.150. Weak items are characterized by randomly ordered CRCs and

small IIFs of about 1.7 or less in value.

Table 4

IRT Analysis and Item Parameter Estimates for EES

Item	a(SE)	b1(SE)	b2(SE)	b3(SE)	b4(SE)	□²	df	p
1	.78(.08)	-2.93(.13)	-2.53(.09)	-1.61(.08)	-0.27(.08)	29.45	30	.49
2	1.18(.11)	-2.28(.13)	-1.24(.06)	-0.71(.05)	0.34(.06)	24.97	31	.77
3	1.12(.10)	-3.33(.29)	-2.03(.10)	-1.21(.07)	0.65(.07)	16.33	26	.93
4	0.65(.05)	-3.08(.19)	-1.31(.09)	-0.10(.08)	1.97(.12)	28.67	41	.93
5	0.65(.06)	-4.45(.36)	-2.93(.14)	-1.99(.10)	1.09(.10)	19.56	28	.88
6	0.75(.09)	-4.74(.43)	-3.99(.18)	-3.72(.16)	-0.89(.09)	20.27	19	.38
7	0.90(.09)	-2.58(.15)	-1.44(.06)	-1.07(.05)	-0.07(.06)	29.09	34	.71
8	1.20(.13)	-3.17(.21)	-2.79(.14)	-2.16(.10)	-0.27(.06)	9.28	20	.98
9	1.08(.10)	-4.00(.52)	-2.73(.17)	-1.55(.08)	0.23(.06)	9.07	22	.99
10	1.11(.10)	-3.33(.29)	-2.03(.10)	-1.21(.07)	0.65(.07)	16.33	26	.93
11	0.59(.05)	-3.80(.24)	-2.45(.12)	-0.12(1.12)	0.09(1.49)	26.02	36	.89
12	1.61(.16)	-2.95(.28)	-1.81(.07)	-1.36(.06)	0.13(.05)	14.78	23	.90
13	0.87(.08)	-2.60(.15)	-1.26(.06)	-0.70(.06)	0.68(.07)	41.90	37	.27
14	1.10(.09)	-2.30(.13)	-1.08(.06)	-0.28(.05)	1.12(.07)	22.95	35	.94
15	1.26(.11)	-2.64(.17)	-1.52(.07)	-0.61(.05)	1.20(.07)	26.63	29	.59
16	0.83(.08)	-3.36(.23)	-2.20(.09)	-1.69(.07)	0.12(.07)	12.86	28	.99
17	0.56(.05)	-4.40(.33)	-2.30(.11)	-1.39(.09)	1.06(.11)	25.32	35	.89

IRT Analysis and Item Parameter Estimates for EES Continued

Item	a(SE)	b1(SE)	b2(SE)	b3(SE)	b4(SE)	χ^2	df	p
18	1.07(.09)	-3.05(.22)	-1.88(.09)	-0.93(.06)	0.94(.07)	14.23	28	.99
19	0.71(.06)	-4.14(.34)	-2.54(.14)	-0.89(.08)	1.30(.10)	26.83	33	.77
20	1.03(.11)	-3.76(.35)	-3.00(.18)	-2.07(.11)	0.03(.07)	16.39	21	.75
21	0.94(.10)	-3.75(.35)	-2.32(.08)	-2.08(.07)	-0.07(.07)	27.44	22	.19
22	0.42(.03)	-4.76(.31)	-2.39(.13)	-0.95(.11)	2.17(.16)	49.95	40	.13
23	1.41(.13)	-2.71(.19)	-1.66(.08)	-0.69(.05)	0.83(.06)	23.99	26	.58
24	0.83(.07)	-3.31(.22)	-2.26(.11)	-1.37(.08)	0.54(.08)	16.50	29	.97
25	0.53(.05)	-3.08(.17)	-1.80(.06)	-1.59(.05)	-0.07(.10)	21.79	34	.95
26	0.55(.05)	-5.72(.56)	-3.95(.22)	-2.62(.14)	-0.72(.11)	25.74	26	.48
27	1.58(.14)	-1.84(.09)	-1.12(.05)	-0.65(.04)	-0.52(.05)	32.28	31	.40
28	0.76(.07)	-4.39(.40)	-3.27(.20)	-1.07(.09)	-0.63(.08)	22.10	27	.73
29	0.59(.05)	-4.02(.26)	-2.64(.14)	-1.03(.10)	1.45(.11)	26.82	33	.77
30	0.79(.06)	-2.50(.14)	-1.19(.07)	-0.22(.07)	1.47(.09)	48.62	39	.14
31	NA	NA	NA	NA	NA	NA	NA	NA
32	0.69(.07)	-5.60(.81)	-3.20(.17)	-2.37(.12)	0.57(.09)	20.39	30	.91
33	0.68(.06)	-1.97(.11)	-0.63(.05)	-0.20(.06)	1.37(.10)	45.48	43	.37
34	0.70(.06)	-4.23(.33)	-3.02(.17)	0.73(.09)	1.07(.09)	20.24	33	.96
35	NA	NA	NA	NA	NA	NA	NA	NA
36	0.98(.09)	-2.62(.15)	-1.55(.07)	-1.05(.58)	0.55(.07)	22.85	32	.88

IRT Analysis and Item Parameter Estimates for EES Continued

Item	a(SE)	b1(SE)	b2(SE)	b3(SE)	b4(SE)	²	df	p
37	NA	NA	NA	NA	NA	NA	NA	NA
38	0.76(.07)	-3.96(.32)	-2.60(.12)	-1.82(.09)	0.23(.08)	15.67	28	.97
39	0.78(.07)	-3.30(.23)	-1.71(.08)	-1.06(.07)	1.14(.09)	16.90	33	.99
40	0.99(.09)	-4.25(.57)	-2.75(.17)	-0.90(.07)	1.31(.08)	16.05	25	.91
41	0.20(.02)	-7.24(.49)	0.23(.23)	4.23(.26)	8.11(.49)	24.44	46	1.00
42	0.54(.04)	-1.87(.13)	0.41(.07)	1.10(.08)	3.01(.17)	57.31	45	.10
43	0.35(.03)	-7.19(.62)	-2.03(.11)	-1.34(.10)	1.48(.16)	29.35	37	.81
44	0.55(.05)	-5.37(.41)	-4.37(.25)	-2.71(.15)	0.15(.11)	43.02	27	.03
45	1.36(.13)	-3.16(.30)	-2.07(.09)	-1.51(.07)	0.16(.05)	16.89	23	.81
46	0.93(.08)	-3.31(.26)	-1.67(07)	-1.23(.06)	0.59(.07)	21.49	30	.87
47	0.57(.05)	-3.35(.20)	-1.82(.10)	0.80(.09)	2.00(.13)	41.94	41	.43
48	0.82(.08)	-3.88(.31)	-2.92(.15)	-2.07(.10)	0.32(.08)	20.93	23	.59
49	1.31(.11)	-1.47(.07)	-.54(.05)	0.06(.05)	0.95(.06)	30.16	37	.78
50	0.48(.04)	-3.42(.22)	-.33(.10)	0.99(.10)	3.22(.19)	38.72	46	.77
51	0.75(.06)	-3.53(.26)	-1.65(.08)	-0.89(.07)	1.18(.09)	24.39	34	.89
52	1.20(.11)	-2.88(.19)	-2.16(.10)	-1.17(.07)	0.52(.06)	20.87	24	.65
53	0.43(.04)	-7.70(.94)	-3.06(.19)	-0.69(.12)	1.99(.15)	33.79	36	.57
54	0.70(.06)	-5.03(.57)	-2.95(.17)	-1.29(.09)	1.15(.10)	26.06	32	.76
55	1.04(.09)	-3.06(.23)	-1.53(.08)	-0.49(.06)	1.25(.08)	11.83	31	1.00

IRT Analysis and Item Parameter Estimates for EES Continued

Item	a(SE)	b1(SE)	b2(SE)	b3(SE)	b4(SE)	χ^2	df	p
56	0.59(.05)	-4.53(.35)	-2.62(.14)	-0.98(.10)	1.94(.13)	29.40	34	.69
57	0.83(.08)	-4.10(.37)	-2.37(.10)	-1.87(.08)	-0.09(.07)	19.83	27	.84
58	0.84(.07)	-2.56(.15)	-1.33(.07)	-0.71(.06)	0.99(.08)	32.31	38	.73
59	0.84(.07)	-2.56(.15)	-1.33(.07)	-0.71(.06)	0.99(.08)	32.32	38	.73

Note. n = 461. If *NA* is listed, the item did not fit the model and no values were available.

Table 5

Items with Stable Category Response Curves in IRT

Item	M(SD)	IIF	FL	Item	M(SD)	IIF	FL
2	3.91(1.18)	19.47	.74	21	4.39(0.80)	31.35	.54
3	4.08(0.84	20.11	.73	23	3.90(0.91)	32.15	.80
8	4.53(0.65)	23.44	.66	27	3.83(1.17)	33.37	.82
9	4.31(0.73)	24.12	.72	36	3.99(1.06)	35.38	.60
10	-3.91(0.84)	24.81	.73	40	3.90(0.73)	36.25	.62
12	4.30(0.81)	26.16	.81	45	4.32(0.77)	37.00	.73
14	3.57(1.13)	27.28	.72	46	4.02(0.99)	37.08	.63
15	3.76(0.92)	28.12	.77	49	3.30(1.34)	37.14	.79
18	3.93(0.89)	29.88	.68	52	4.13(0.84)	36.98	.64
20	4.42(0.67)	30.90	.60	55	3.71(0.95)	36.63	.66

Note. n = 461.
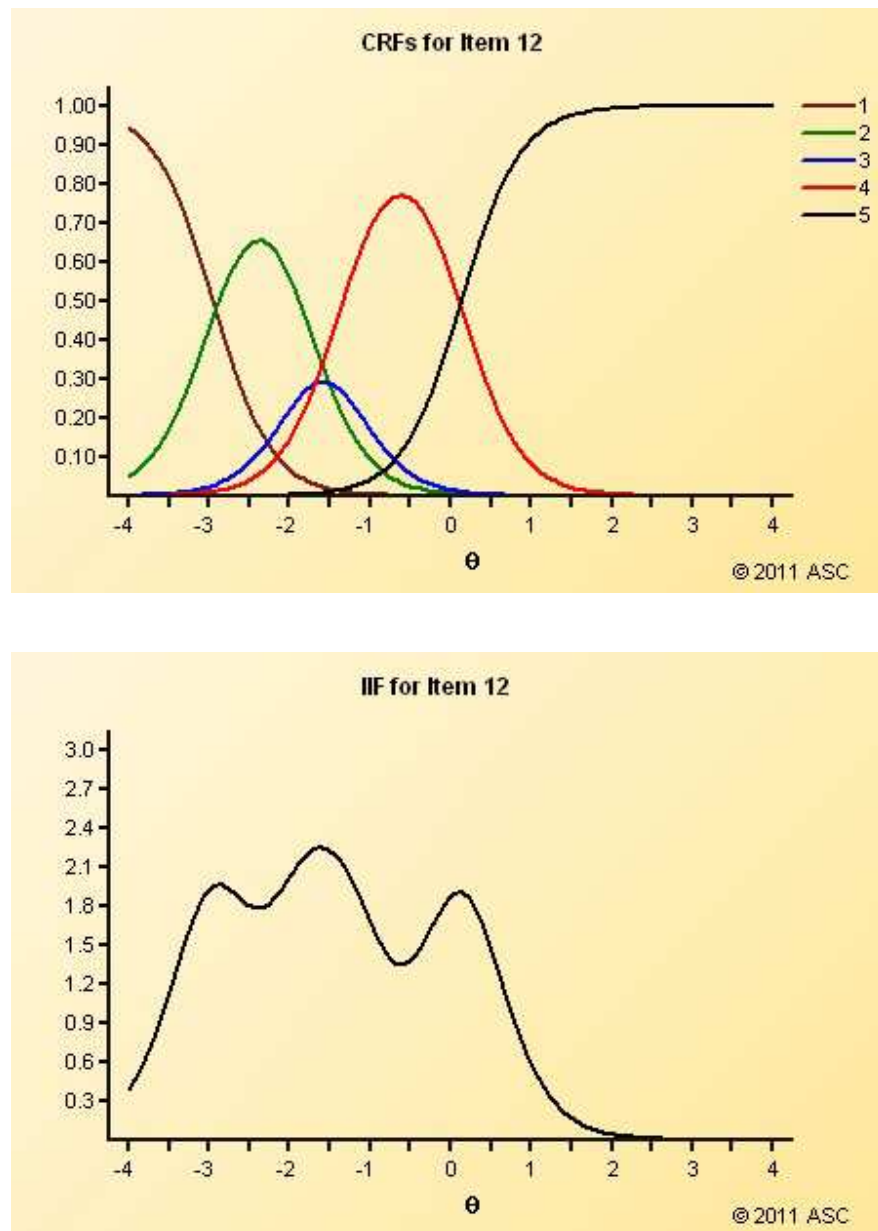
Figure 1. *Category Response Curves and Item Information Function for Item 12*
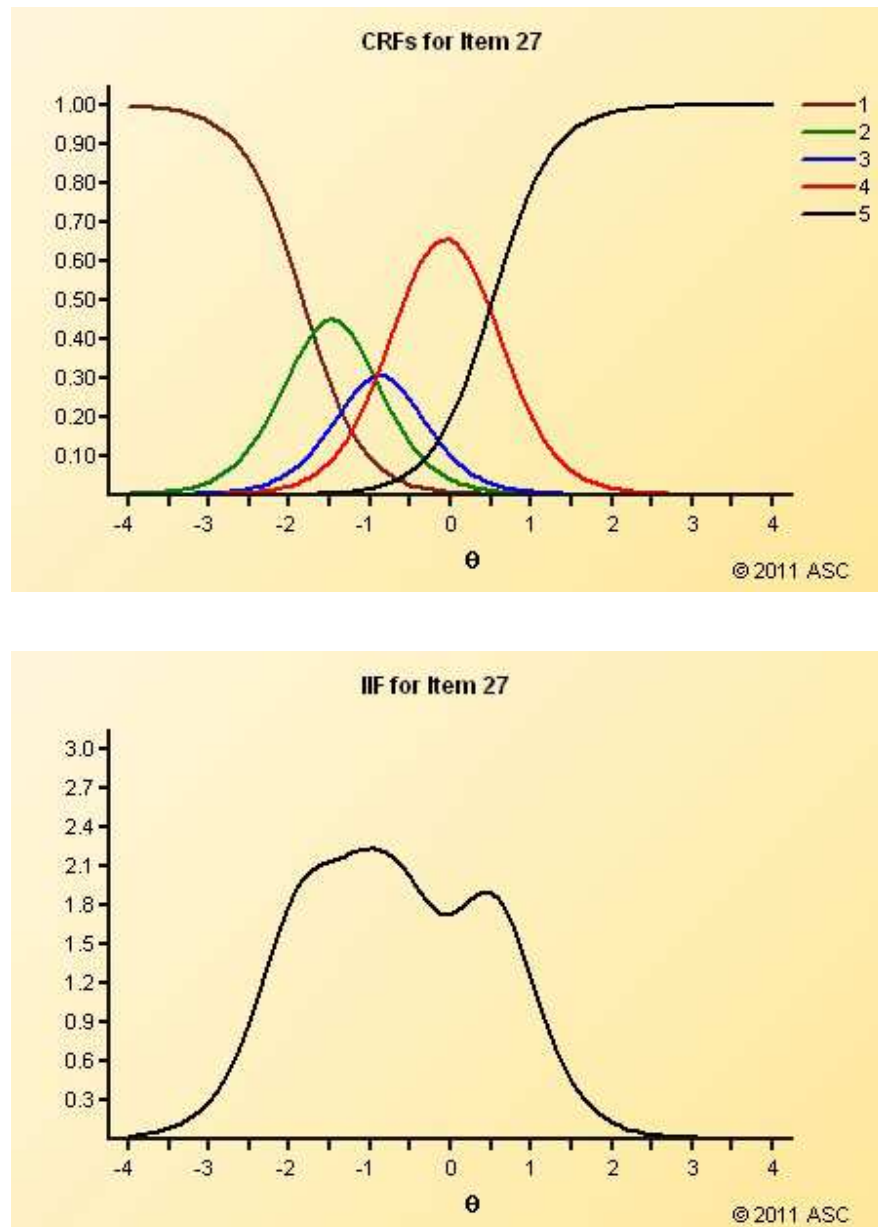
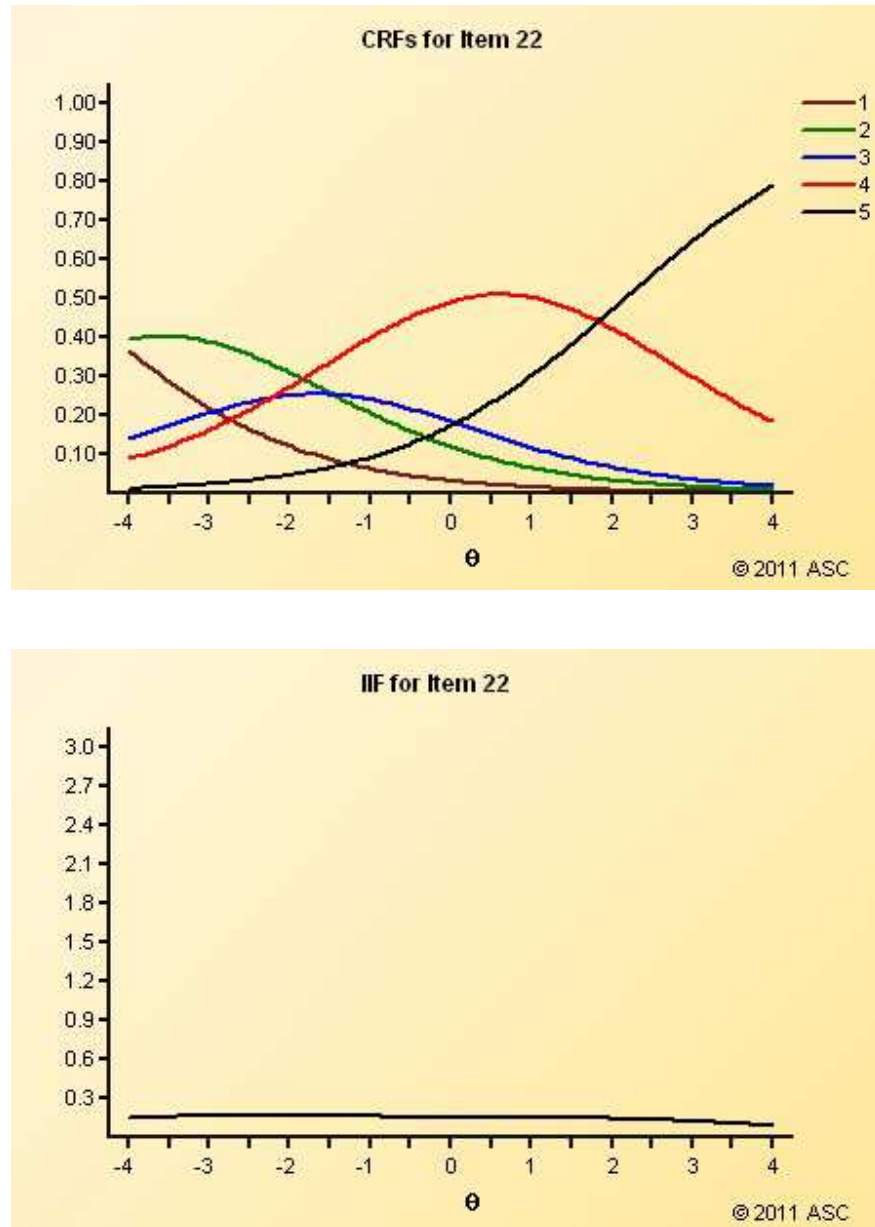Figure 2. *Category Response Curves and Item Information Function for Item 27*

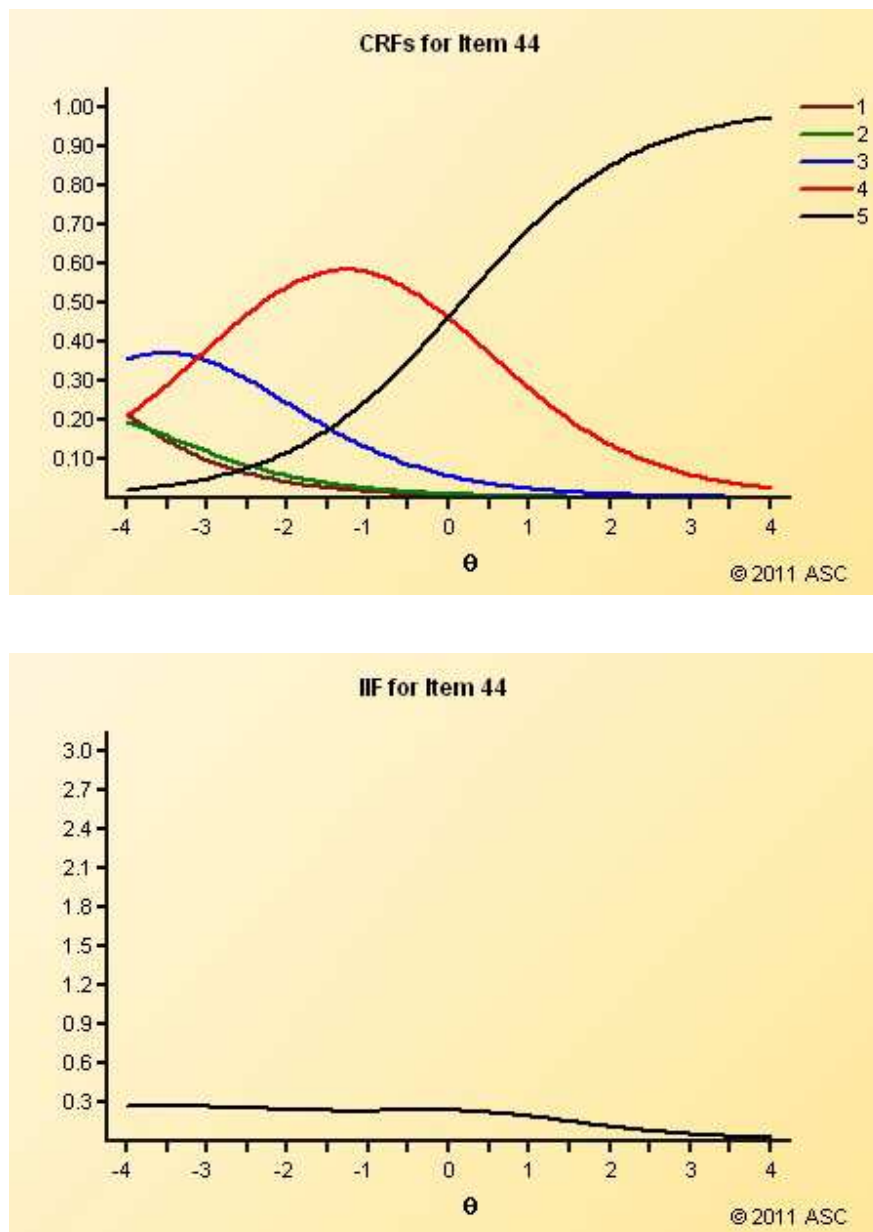Figure 3. *Category Response Curves and Item Information Function for Item 22*

Figure 4. *Category Response Curves and Item Information Function for Item 44*

After IRT analysis, twenty items were selected as having good CRCs and high item information functions. See Table 5 for a list of means, standard deviations, IIFs, and factor loading for those selected items. The Cronbach's alpha for the EES when using the twenty selected items revealed a strong reliability of .94. The alpha was computed after IRT analysis to re-check the reliability. Results from both CTT and IRT analyses had similar outcomes for reliability and predictability of literacy scores, with very relatable Cronbach's alphas. For example, the CTT factor loading score for item number 2 was .69 and in IRT it was .74. They did not have the exact same scores, but were very comparable and both indicated high factor loadings. Reference both Table 3 and 5 to compare all results from CTT and IRT analysis.

Regression Analysis

Question four, "Will the parent score prediction outcome vary when using different grade levels to investigate during this second study?," and question five, "What specific literacy scores will be predicted by the survey (e.g., letter naming, letter sounds, Curriculum Based Measures (CBM), MAZE, ThinkLink, or TCAP scores)," were unfortunately not confirmed through the results of this study. A regression analysis was performed to predict various elementary literacy scores with the combined EES scores and SES of the parents. No literacy scores were significantly predicted with the EES by itself. SES proved to be a greater predictor of student scores beginning with kindergarten students' letter naming fluency (LNF). SES and EES combined significantly predicted LNF, $F(2, 118) =$

4.81, $p < .05$, $p = .01$, $R^2 = .08$. Parents' SES and EES total scores also

significantly predicted the kindergartens' letter sound fluency (LSF), $F(2, 118) =$

3.70, $p < .05$, $p = .03$, $R^2 = .06$. Parents' SES and EES total scores did not

predict literacy scores for CBM fluency assessments in any grade they were

administered. Almost no scores were predicted for the MAZE assessment either,

with the exception of fourth grade scores. Fourth graders' MAZE scores were

significantly predicted, $F(2, 63) = 4.63$, $p < .05$, $p = .01$, $R^2 = .13$. This illustrates

that parental experience fades in influence over time for students, since fourth

grade was the highest grade used for analysis in this study. ThinkLink test

scores for a combined first through fourth grades were not significantly predicted.

Last year's TCAP scores for fourth graders were not significantly predicted by the

EES and SES either, which was to be expected after the results of the other

fourth grade literacy tests in comparison to the EES and SES.

The final research question was, "Will the socio-economic status (SES) of

the parents be a significant factor when predicting student literacy scores?"

Since the SES indicated by the parents proved to be a greater predictor of

student scores than the EES, SES levels were also sorted out for further

comparisons to AIMSweb data for the combined grade levels and several

significantly predicted test scores were found. The first AIMSweb score for

all grade levels was significantly predicted by EES on SES level 3

(laborers in mining and light manufacturing, personal service workers,

equipment operators), $F(1,20) = 6.84$, $p < .05$, $R^2 = .25$. The student

scores coordinating with parent SES levels 2, 3, and 7 significantly

predicted the literacy scores on the second AIMSweb assessment as

follows. On level 2 of SES, indicating their parents were laborers in

heavy manufacturing and on farms, the EES was a significant predictor

of the second AIMSweb scores, $F(1,15) = 1.10$, $p < .05$, $R^2 = .07$. These

findings indicate that SES significantly predicted the second AIMSweb

scores with 7% of the variance explained when the parents SES level was

2. On level 3 of SES again, the EES was a significant predictor of the

second AIMSweb, $F(1,20) = 5.20$, $p < .05$, $R^2 = .21$, indicating that SES

scores significantly predicted the second AIMSweb scores with 21% of the

variance explained when the parents SES level was 3. Finally for level 7

of SES (indicating highly skilled craftsmen, skilled clerical workers self-

employed proprietors in wholesale trade or furnishings, salaried

managers in retail trade or administration, certain semiprofessional), the

EES was a significant predictor of the second AIMSweb, $F(1,35) = 6.70$, p

$< .05$, $R^2 = .25$. The results indicated that the SES level significantly

predicted the second AIMSweb scores with 25% of the variance explained

when the parents SES level was 7. The general trend showed that the

higher the SES was, the more variance of children's literacy scores could

be explained, however, SES at levels at 8 through 10 did not explain a

significant amount of variance in scores.

CHAPTER V: DISCUSSION

Findings

Several meaningful findings resulted from this study of the Elementary Experience Scale. First, the EES was psychometrically validated with both CTT and IRT, and found to be a valid measurement through both analyses. Upon CTT analysis of the results, a clear single factor solution emerged accounting for the variation of parent survey responses. The EES as a whole had a very high Cronbach's alpha of 0.95, which highlights the reliability of the scale's questions in measuring parents' elementary school experiences. During the IRT validity process of the EES, certain questions developed for the scale were found to have lower impact on evaluating an adult's elementary experience, and therefore could be eliminated for further analysis of the data. Since IRT evaluates the strength and weakness of each item, it was a very positive outcome to see that only three items on the scale did not converge and one item did not fit Samejima's Graded Response Model. These items would need to be modified or omitted from future research with the EES in order for all the items to have a better overall fit to the model. Adjusting these items would also help the EES be a better predictor of elementary experiences.

As far as the literacy scores, a few subtests showed some significant correlations and many subtests did not materialize as significant at all. The subtests that were significant in AIMSweb were in kindergarten measures, and

this adds evidence to the conclusion that the home environment plays an

important role in predicting the earliest of literacy outcomes, but that the impact

of these effects may fade over time. Teacher effect may have a larger emphasis

on the academic progress of the students as they increase in age and their time

spent in school. This effect is also further illustrated by the fact that fourth

graders' MAZE assessment scores were predicted by EES, meaning the less the

parent's overall experience score, the better the student's MAZE scores. One

could hypothesize that these results could be due to parents of fourth graders

that had negative school experiences deciding to stay more involved in their

students' academics in order to help their children have a better overall school

experience than they did. The categories of almost all AIMSweb subtests in first

through fourth grades, ThinkLink scores, and TCAP reading results were each

found to be insignificant predictors in the variance of the findings. One could

hypothesize here that the literacy measures used may not have been appropriate

for predicting parent influence.

SES levels were examined individually and a few SES levels

predicted the AIMSweb scores. AIMSweb's first literacy scores, most

being CBM's, were predicted by the parents' EES on level 3 of SES.

AIMSweb's second scores, mainly comprised of the MAZE comprehension

measure, were predicted by the parents' EES on levels 2, 3, and 7 of SES

(level 2 indicated laborers in heavy manufacturing and on farms; level

3 indicated laborers in mining and light manufacturing, personal

service workers, equipment operators; level 7 represented highly

skilled craftsmen, skilled clerical workers self-employed proprietors in

wholesale trade or furnishings, salaried managers in retail trade or

administration, certain semiprofessionals). The research conclusions are

not clear here, however, it can be said that SES played a much more

significant role in predicting student literacy scores than the EES did during

this research analysis. In addition, the basic trend in the analysis showed

that the higher the SES reported level by parents was, the more variance

of children's literacy scores could be explained.

More parent participation was noted in the lower grades, with a steady

decline in participant numbers as the grades increased in level, which match the

research stating parent involvement drops as children mature (Dietz, 2005).

Also, schools with higher SES populations had more parent participants than

schools with lower reported SES of the students' families. Does Stanovich's

(1986) Matthew Effect, where more advanced students gain more and

disadvantaged students fall further behind, apply to this scenario as well?

According to Walberg (1984), the Matthew Effect could be a factor in family

involvement research as well, because he found that family involvement had

almost double the effect on student achievement gains than family SES did.

Almost all EES items with high factor loading scores of .60 or higher from

the pilot study also had high factor loading scores in this study. Of the five items

from the pilot study that had high factor loadings that did not in this study, three

of them were related to organizational skills and the other two were related to

parental influences. Factor loading scores were given a slightly lower cutoff point

of .49 due to data trends in this study, and therefore included more questions.

Nine questions were not found in the pilot study to have high factor loadings that

were found to be high in this study. Four of the nine were related to parental

influences, one to social-emotional development, one fell under the original

category of organization, one referenced overall experience, and two pertained to

academics. One could conclude that the pilot study had slightly different results

than this one regarding questions relating to organizational skills and parental

effects on elementary school experiences. Again, the majority of the same

questions were found to have high factor loadings in both experiments.

Lastly, it was interesting to confirm that female guardians were much more

likely to partake in this type of educational involvement than males. Just as

previous research has illustrated, mothers tend to take on more of the

responsibility in educating the children, and therefore are more involved in all

aspects of school participation. This study could help illustrate that mothers'

greater contribution rate than that of the males in the students' lives even

transfers into more participation in taking surveys for educational research.

Medinnus (1962) also concluded from his parent involvement research that

perhaps the effect of a parent's experiences are not that great on their student if

that parent is not the one more involved in the educational pursuits of the child.

In summary, the six research questions asked at the beginning of this dissertation received their answers. The EES did show a one factor solution through EFA. High factor loading scores for the same items on the scale were similar for both the pilot study and this study with a few exceptions. Similar patterns of item strength and weaknesses were found in both CTT and IRT. Parent score predictions did vary some according to both grade levels and literacy measure used for comparison, but provided inconclusive findings. Specific literacy scores were not conclusively predicted in this study. SES was a significant factor of variance when predicting student's literacy scores in a few categories.

Contributions

Evidence in regards to the reliability and validity of the EES is now better confirmed. The EES can be used and refined again in future research regarding parents' own elementary school experiences. It is both a significant and meaningful endeavor to explore the predictability of children's reading ability utilizing parents' elementary school experiences. Since family literacy is a cooperative effort from all family members, discerning the relationship between parents' school experience and children's reading skills shed light onto family literacy research. If practitioners in the field of education know specific areas to target in regards to welcoming families into the schools and helping alleviate parents' past problems encountered during their own school experiences, this information could prove to be immensely groundbreaking. If parents can

overcome their negative childhood education experiences they will certainly be more open to working with the schools to learn the best suited strategies to help their students succeed. Teachers can learn from the parents many useful communication tips to reach the students as well, but not if parents do not feel comfortable divulging that information. Families that follow cyclical patterns from generation to generation of reading failure can benefit indefinably from that one practitioner that stands up and says, "The cycle stops here. I care about you and your child, and I need your partnership to help facilitate his success. Let's be partners."

Limitations

One limitation of this study included the fact that survey participants were gathered from the same local school district and not administered on a larger scale to help rule out any results found from this research being generalized to a single area's population. Data from one local school district can contain some characteristics specific to the geographical area that is not generalizable to other areas.

Another limitation of the findings is that the tests administered and analyzed were not all uniform as they were in the pilot study. In order to complete an analysis with enough participants for statistical reliability, more than one grade level had to be involved. Differentiating the grade levels varies the type of appropriate test administered. Furthermore, test misunderstanding and

or anxiety, especially with the youngest learners, has been known to distort data and could be a possible factor in this research (Cassady & Johnson, 2001).

The next limitation is that parents who had extremely poor school experiences or those who are adverse to school participation completely most likely did not participate in this research. It is thought that parents who were more involved in school practices already were more likely to be involved in this research, and may have had more favorable school experiences overall. This factor could have possibly contributed to the lack of variance when predicting students' literacy scores.

Self-reported scores were used for SES and for the EES. Self-reported data can result in participants reporting what they suspect the researcher is looking for or even reporting what reflects positively on them, even if that information is false (Cook & Campbell, 1979). It would have been beneficial to have a record of participant completion time, since upon analysis of the data it seems several parents may have indicated the same range of scores for almost all of their responses. Being able to eliminate participants' scores who did not put forth much thought into the answering process would have been valuable, since careless responses could have possibly skewed collected results.

Lastly, the lack of validated methods to evaluate parent's personal experiences during their time in elementary school led to few opportunities for comparison when both developing the scale and in validating its worthiness in implementation. The deficient number of references available to during the

development of the scale may have contributed to its limitations.   Additionally, there were not any studies found comparing such a scale to literacy scores specifically, and this contributed to the issues in selecting criteria for predictability of literacy development.

Future Studies

Implications for future studies using the EES are great. Using the validity factors of the questions conducted in this study, researchers could reduplicate the study eliminating the questions that were found to have low factor loading scores during EFA in CTT and low IIFs during IRT analysis. Also, if the survey was administered in multiple school districts, more in-depth statistical analysis could be performed in order to further validate generalizability and refine the individual effectiveness of the questions used in the EES.

Other implications for future research suggest the scale's use with a variety of early literacy assessments to explore which areas the parents' experiences have the greatest impact on student's literacy development. Exploration could also be completed by implementing the EES to evaluate the relationship between the parents' past school experiences and other areas of non-academic development in children. For example, social-emotional development and maturity of students when entering kindergarten could be explored in correlation to the EES. A longitudinal study could also be warranted using the EES to investigate if the parent effect on student academic progress is

steady for the duration of the student's elementary school years, or if indeed the parental influence fades for students as time progresses.

Medinnus (1962) used his scale in comparison with parents' highest attained education level. Parents' education level might be a factor worth investigating in future studies with the EES in order to highlight the correlation between parents' past school experiences and how long they remained in schools themselves. It is thought that the more education the parent received, the better they will be able to assist their own student with schoolwork. Also, there could be a greater emphasis on learning in families where the parents are more educated themselves, which could foster better student success overall (Magnuson, Sexton, Davis-Kean, & Hudson, 2009). Therefore parent education levels would be an avenue to investigate in future studies.

It would be beneficial to offer the EES during parent-teacher conferences or family literacy night events to allow more families to participate who may not have the means to do so at home. The EES could also have translations or an audio component to allow more diverse family participation. Also, it would be interesting to compare the SES of families to the overall results of the EES itself in future research. A response rate of participants would be a meaningful element of research to add to the next implementation of the EES in order to help determine those participants who may have rushed their responses and should possibly be eliminated from the analysis.

Summary

Families that read together learn and grow together. Schools that offer family literacy opportunities also benefit from the cohesiveness developed during school and community uniting events. The problem is that some adults do not feel welcome or comfortable in the school settings simply based on their own experiences when they were a student themselves and the EES highlights this fact. The adult's level of anxiety, mistrust, or general aversion to the world of academics can transfer to that of their student's early learning progress if action is not taken to alleviate fears and break down the barriers of a preconceived negative notion about schools and their intentions for students. Parents want to help their students achieve, they just need to know how and feel comfortable approaching educational professionals for help. Educators and parents alike can gain from each other's expertise. Families are the schools' greatest resource and there needs to be a better bridge to help welcome them into the school community, and family literacy initiatives are the key to paving the way for better practices between home and school. Perhaps in the future the EES will be one useful avenue for getting to the root of the parent and school disconnect and its measures will help shed light on areas for school improvement as well as ideas for getting parents into the schools and more involved in their children's education.

References

AIMSweb. (2013). Retrieved October 20, 2013, from

http://www.aimsweb.com/products/features/assessments/maze

Allen, J. B. (2007). Creating welcoming schools: A practical guide to home-

school partnerships with diverse families. New York, NY: Teacher's

College Press.

Allen, M. J., & Yen, W. M. (1979). *Introduction to Measurement Theory.*

Belmont, CA: Wadsworth, Inc.

Ames, C., de Stefano, L., Watkins, T., & Sheldon, S. (1995). *Teachers' school-to-*

home communications and parent involvement: The role of parent

perceptions and beliefs. Retrieved from ERIC database. (ED383415)

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward

an understanding of parents' decision making. *Journal of Educational*

Research, 100(5), 311-323.

Bagdi, A., & Vacca, J. (2005). Supporting early childhood well-being: The

building blocks for early learning and school success. *Early Childhood*

Education Journal, 33(3), 145-150. doi: 10.1007/s10643-005-0038-y

Beals, D. E., & Snow, C. E. (2006). Mealtime talk that supports literacy

development. *Child and Adolescent Development,* 111, 51-56, doi:

10.1002/cad.154

Bennett, K. K., Weigel, D. J., & Martin, S. S. (2002). Children's acquisition of
early literacy skills: Examining family contributions. *Early Childhood
Research Quarterly, 17*(3), 295-317.

Biggar, H., & Pizzolongo, P. (2004). School readiness: More than abcs. *Young
Children, 59*(3), 64-67.

Bird, V. (2005). Understanding family literacy. *Literacy Today,* 12.

Boyle, K. & Mistrett, S. (2009). Which early skills best predict later school
success? *Middle East Educator, 13,* 20-23.

Bureau of Labor Statistics, Employment Characteristics of Families. (2012).
*Table 5: Employment status of the population by sex, marital status, and
presence and age of own children under 18, 2010-2011 annual averages*.
Retrieved from: http://www.catalyst.org/knowledge/working-parents

Cartwright, K. B. (2012). Insights from cognitive neuroscience: The importance of
executive function for early reading development and education. *Early
Education and Development, 23*, 59-73. doi:
10.1080/10409289.2011.611411

Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic
performance. *Contemporary Educational Psychology, 27*, 270–295.

Chance, R. (2010). Family literacy programs- Opportunities and possibilities.
Teacher Librarian, 37(5), 8-12.

Cizek, G. (2007). Terra nova, the second edition. In K. F. Geisinger, R. A. Spies, J. F. Carlson, & B. S. Plake (Eds.), *The seventeenth mental measurements yearbook.* Lincoln, NE: Buros Institute of Mental Measurements. Retrieved from Mental Measurements Yearbook database.

Chavkin, N. F., & Gonzalaz, D. L. (1995). *Forging partnerships between Mexican-American parents and schools.* Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. ED388498.

Christian, K., Morrison, F. J., & Bryant, F. B., (1998). Predicting Kindergarten academic skills: Interactions among child care, maternal education, and family literacy environments. *Early Childhood Research Quarterly, 13*(3), 501-521.

Clark, D. L. (1980). Factors associated with success in urban elementary schools**.** *Education Digest, 45,*10-13.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues.* Boston, MA: Houghton Mifflin Company.

Compton-Lilly, C. (2010). Considering time in the field of family literacy and in the lives of families. In K. Dunsmore & D. Fisher (Eds.), *Bringing home literacy,* (pp. 306-331). Newark, DE: International Reading Association.

Compton-Lilly, C., Rogers, R., & Lewis, T. Y. (2012). Analyzing epistemological considerations related to diversity: An integrative critical literature review of family literacy scholarship. *Reading Research Quarterly, 47*(1), 33-60. doi: 10.1002/RRQ.009

Cronbach, L.J. (1951). Coefficient alpha and the internal strucuture of tests.

> Psychometrika, 16, 297-334.

Darling, S. (2004). Future directions for family literacy. In B. H. Wask (Ed.),

> *Handbook of Family Literacy,* (pp. 603-616). Mahwah, NJ: Lawrence

> Erlbaum Associates.

Denham, S. A., Way, E., Kalb, S. C., Warren-Khot, H. K., & Bassett, H. H.

> (2013). Preschoolers social information processing and ealy school

> success: The challenging situations task. *British Journal of Developmental*

> *Phycology, 31,* 180-197.

Donne, J. (1988). *No man is an island.* London, England: Souvenir Press.

Dodd, B. G., De Ayala, R. J., & Koch, W. R. (1995). Computerized adaptive

> testing with polytomous items. *Applied Psychological Measurement, 19*(1),

> 5-22.

Dietz, M. J. (Ed.). (2005). School, family, and community: Techniques and

> models for successful collaboration. Mississauga, ON: Jones and Bartley

> Publishers Canada

Discovery Education. (2006). *Discovery education assessment research.*

> Retrieved from:

> http://www.discoveryeducation.com/pdf/assessment/Discovery_Education

> _Assessment_Research.pdf

Douville, P. (2000). Helping parents develop literacy at home. *Preventing School*

> *Failure, 44*(4), 179-180. doi: 10.1080/10459880009599804.

Dunsmore, K., & Fisher, D. (Eds.). (2010). *Bringing home literacy.* Newark, DE: International Reading Association.

Educational Testing Services (2013). Retrieved from: http://www.ets.org/research

El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. *Child Development, 81*(3), 988-1005.

Embretson, S. E., & Reise, S. P. (2000). *Item Response Theory for Psychologists.* Mahwah, NJ: Lawrence Erlbaum Associates.

Epstein, J. L. (2001). School, family, and community partnerships. Preparing educators for improving schools. Boulder, CO: Westview Press.

Fain, J. G., & Horn, R. (2006). Family Talk About Language Diversity and Culture. *Language Arts, 83*(4), 310-320.

Farver, J. M., Xu, Y., Lonigan, C. J., & Eppe, S. (2012). The home literacy environment and Latino Head Start children's emergent literacy skills. *Developmental Psychology,* 1-17. doi: 10.1037/a0028766

Fishel, M., & Ramirez, L. (2005). Evidence-based parent involvement interventions with school-aged children. *School Psychology Quarterly, 20*(4), 371-402.

Frew, L.A., Zhou, Q., Duran, J.B., Kwok, O., & Benz, M.R. (2012). Effect of school-initiated parent outreach activities on parent involvement in school events. *Journal of Disability Policy Studies.*

Frey, N. (2010). Home is not where you live but where they understand you. In K.
Dunsmore & D. Fisher (Eds.), *Bringing home literacy,* (pp. 32-52). Newark,
DE: International Reading Association.

Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A
meta-analysis. *Exceptional Children, 53*, 199-208.

Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Ferguson, C. (1992). Effects of expert
system consultation within curriculum-based measurement, using a
reading MAZE task. *Exceptional Children, 58*(5) 436-450.

Gall, M. D., Gall, J. P., & Borg, W. R. (Eds.). (2007). *Educational research.* (8th
ed.). Boston, MA: Pearson Education, Inc.

Gierl, M. J., & Akerman, T. (1996). Software review XCalibre, marginal
maximum, likelihood estimation program, Windows version 1.10. *Applied
Psychological Measurement, 20*(3), 303-307.

Goldkind, L., & Farmer, G. L. (2013). The enduring influence of school size and
school climate on parents' engagement in the school community. *School
Community Journal, 23*(1), 223-244.

Good, R. H., & Kaminski, R. A. (Eds.). (2002). Dynamic Indicators of Basic Early
Literacy Skills (6th ed.). Eugene, OR: Institute for the Development of
Educational Achievement. Retrieved from: http://uoregon.edu/.

Grace, R., &Trudgett, M. (2012). It's not rocket science: The perspectives of Indigenous early childhood workers on supporting the engagement of Indigenous families in early childhood settings. *Australasian Journal of Early Childhood, 37*(2), 10-18.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V, & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*(3), 532-544. doi: 10.1037/0022-0663.99.3.532

Greene, K., & Anyon, J. (2010). Urban school reform, family support, and student achievement. *Reading and Writing Quarterly. 26*(3), 223-236.

Griffith, J. (1998). The relation of school structure and social environment to parent involvement in elementary schools. *The Elementary School Journal, 99*(1), 53-80.

Hallinger, P., & Heck, R. H. (1996). Reassessing the principal's role in school effectiveness: A review of empirical research, 1980-1995. *Educational Administration Quarterly, 32*(1), 5-44.

Hambleton, R. K., & Jones, R. W. (1993). Comparison of classical test theory and item response theory and their applications to test development. *Educational Measurement: Issues and Practice,* 37-47.

Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of Item Response Theory (Measurement Methods for Social Sciences).* California: Sage Publication.

Hambleton, R. K., & van der Linden, W. L. (1982). Advances in item response

theory and applications: An introduction. *Applied Psychological*

Measurement, 6, 373-378. doi: 10.1177/104662168200600401

Hamilton, C., & Shinn, M. R. (2003). Characteristics of word callers: An

investigation of the accuracy of teachers' judgments of reading

comprehension and oral reading skills. *School Psychology Review, 32*(2),

228-240.

Harris, A., & Goodall, J. (2008). Do parents know they matter? Engaging all

parents in learning. *Educational Research, 50*(3), 277-289.

Hart, B., & Risley, T. R. (2003). The early catastrophe: The 30 million word gap

by age 3. *American Educator, 27*(1). 4-9.

Heath, S. B. (1983). *Ways with words: language, life, and work in communities*

and classrooms. Cambridge, England: Cambridge University Press.

Hendrix, S. (1999). Family literacy education- Panacea or false promise? *Journal*

of Adolescent and Adult Literacy, 43(4), 338-346.

Hilden, K., & Jones, K. (2013). Parents and caregivers: How to build effective

home-school connections. *Reading Today, 31*(1), 17-19.

Hoover-Dempsey, K. V., & Whitaker, M. C. (2010). The parental involvement

process: Implications for literacy development. In K. Dunsmore & D.

Fisher (Eds.), *Bringing home literacy,* (pp. 53-82). Newark, DE:

International Reading Association.

Howell, L, Sulak, T. N., Bagby, J., Diaz, C., & Thompson, L. W. (2013).

Preparation for life: How the Montessori classroom facilitates the

development of executive function skills. *Montessori Life: A Publication of

the American Montessori Society*, *25*(1) 14-18.

Imber, M., & Van Geel, T. (2004). *Educational Law.* (3rd ed.). Mahwah, NJ:

Lawrence Erlbaum.

Imperato, F. (2009) Getting parents and children off to a strong start in reading.

The Reading Teacher, 63(4), 342-344.

Jordan, G. E., Snow, C. E., & Porche, M. V. (2000). Project EASE: The effect of

a family literacy project on kindergarten students' early literacy skills.

Reading Research Quarterly, 35(4), 524-546.

Kamphaus, R. W. (1987). Conceptual and psychometric issues in the

assessment of adaptive behavior. *The Journal of Special Education,

21*(1), 27-35.

Kessinger, T. A. (2011). Efforts toward educational reform in the United States

since 1958. *American Educational History Journal, 38*(2), 263-276.

Kline, T. J. B. (2005). *Psychological Testing: A Practical Approach to Design and

Evaluation*. Thousand Oaks: Sage Publication.

Lapp, D. (2010). Stories, facts, and possibilities: Bridging the home and school

worlds for students acquiring discourse. In K. Dunsmore & D. Fisher

(Eds.), *Bringing home literacy,* (pp. 136-158). Newark, DE: International

Reading Association.

Leseman, P. P. M., & de Jong, P. F. (1998). Home literacy: Opportunity,

instruction, cooperation and social-emotional quality predicting early

reading achievement. *Reading Research Quarterly, 33*(3), 294-318.

Levine, L. A. (2002). *Teacher's perceptions of parental involvement: How it

effects our children's development in literacy.* Retrieved from ERIC

database. (ED465438).

Low, G. (2011). Putting the fun into phonics- a guide. *Literacy Today,* 8.

Lynch, J. (2009). Print literacy engagement of parents from low-income

backgrounds: Implications for adult and family literacy programs. *Journal

of Adolescent & Adult Literacy 52*(6), 509-521.

Magnuson, K. A., Sexton, H., Davis-Kean, P., & Hudson, A. C. (2009). The

effects of increases in maternal education on young children's language

skills. *Merrill Palmer Quarterly*, (*55*)3, 319-349.

Medinnus, G. R. (1962). The development of a parent attitude toward education

scale. *Journal of Educational Research, 56*(2), 100-103.

Meltzer, L. (2010). *Promoting executive function in the classroom.* New York, NY:

The Guliford Press.

Mercer, J. R., & Lewis, J. F. (1977). *System of multicultural pluralistic

assessment.* New York: Psychological Corp.

Merita, S. (2013). The impact of preschool social-emotional development on

academic success of elementary school students. *Psychology, 4*(11)*,* 787-

791.

Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of

> knowledge for teaching: Using a qualitative approach to connect homes

> and classrooms. *Theory into Practice, 31*(2), 132-141.

Moll, L. C. (2000). Inspired by Vygotsky: Ethnographic experiments in education.

> In C. D. Lee & P. Smagorisky (Eds.), *Vygotskian perspectives on literacy*

> *research* (pp. 256-268). Cambridge: Cambridge University Press.

Moats, L. (1999). *Teaching reading is rocket science.* Washington, D.C.:

> American Federation of Teachers.

Morrow, L. M., Mendelsohn, A. L., & Khun, M. R. (2010). Characteristics of three

> family literacy programs that worked. In K. Dunsmore & D. Fisher (Eds.),

> *Bringing home literacy,* (pp. 83-103). Newark, DE: International Reading

> Association.

National Center for Education Statistics. (1998). Retrieved from:

> http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=1999036

National Opinion Research Center. (1997). *The study of opportunities for and*

> *barriers to family involvement in education: Preliminary results survey.*

> Retrieved from ERIC database. (ED414088)

National Reading Panel. (2000). *Teaching children to read: An evidence-*

> *based assessment of the scientific research literature on reading and its*

> *implications for reading instruction.* Bethseda, MD: National Institute of

> Child Health and Human Development.

Newman, A., Deschenes, S., & Hopkins, K. (2012). From agitating in the streets to implementing in the suites: Understanding education policy reforms initiated by local advocates. *Educational Policy, 26*(5), 730-758. doi: 10.1177/0895904811417586

Padak, N., & Rasinski, T. (2006). Home-school partnerships in literacy education: From rhetoric to reality. *The Reading Teacher, 60*(3), 292-296 doi: 10.1598/RT.60.3.11

Parker, R., Hasbrouck, J. E. & Tindal, G. (1992). The Maze as a classroom-based reading measure: Construction methods, reliability, and validity. *The Journal of Special Education, 26*(2), 195-218.

Peterson, B. E., Smirles, K. A., & Wentworth, P. A., (1997). Generativity and authoritarianism: Implications for personality, political involvement, and parenting. *Journal of Personality and Social Psychology, 72*(5), 1202-1216.

Petty, L. (2011, September 8). Teachers vs. parents: Round 2. *CNN.* Retrieved from http://www.cnn.com/2011/09/08/living/ron-clark-reactions/

Powell-Smith, K. A., Stoner, G., Shinn, M., & Good, R. H. (2000). Parent tutoring in reading using literature and curriculum materials: Impact on student reading achievement. *School Psychology Review, 29*(1), 5-23.

Rich, D. (1985). *The forgotten factor in school success: The family. A policymaker's guide.* Washington, D.C.: The Home and School Institute.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Economictrica, 73*(2), 417-458.

Roser, N. (2010). Talking over books at home and at school. In K. Dunsmore & D. Fisher (Eds.), *Bringing home literacy,* (pp. 104-135). Newark, DE: International Reading Association.

Rouse, H. L., & Fantuzzo, J. W. (2006). Validity of the Dynamic Indicators for Basic Early Literacy Skills as an indicator of early literacy for urban kindergarten children. *School Psychology Review, 35*(3), 341-355.

Rowe, D., & Fain, J. G. (2013). The family backpack project: Responding to dual-language texts through family journals. *Language Arts, 90*(6), 402-416.

Samejima, F. (1969). Estimation of latent trait ability using a response pattern of graded scores. *Psychometrika Monograph,* 17.

Senechal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill- A five year longitudinal study. *Child Development, 73*(2), 445-460.

Shannon, P. (2012). School reform in the United States: Frames and representations. *Reading Research Quarterly, 47*(1), 109-118. doi: 10.1002/RRQ.012

Shapiro, E. S., Keller, M. A., Lutz, J. G., Santoro, L. E., & Hintze, J. M. (2006). Curriculum-based measures and performance on state assessment and standardized tests. *Journal of Psychoeducational Assessment, 24*(1), 19-35. dio:10.1177/0734282905285237

Sheehan, R. (1991). Factors contributing to success in elementary schools: Research findings for early childhood educators. *Journal of Research in Childhood Education*, 6(1), 66-75

Shinn, M. R. (2012). The relation of AIMSweb, curriculum-based measurement, and the common core standards: All parts of meaningful school improvement. Retrieved from: http://www.aimsweb.com/wp-content/uploads/CBM-Common-Core_Mark-Shinn1.pdf

Shockley, B., Michalove, B., & Allen, J. (1995). Engaging families: Connecting home and school literacy communities. Portsmouth, NH: Heinemann.

Sink, D., Parkhill, M., Marshall, R., & Norwood, S. (2005). Learning together: A family centered literacy program. *Community College Journal of Research and Practice, 29*(8), 583-590.

Skouteris, H., Watson, B., & Lum, J. (2012). Preschool children's transition to formal schooling: The importance of collaboration between teachers, parents and children. *Australian Journal of Early Childhood, 37*(4), 78-85.

Sonnenschein, S., & Munsterman, K. (2002). The influence of home-based

    reading interactions on 5-year-olds' reading motivations and early literacy

    development. Early Childhood Research Quarterly, 17, 318-337.

Smith, M. K. (2006). *How can large scale formative assessment be research-*

    based and valid? Presented at 36th annual nation conference on large-

    scale assessment hosted by the Council of Chief State School Officers.

    San Francisco, CA.

Smith, J. (2010). Changing lives one family at a time: The even start family

    literacy model. *Delta Kappa Gamma, 76*(4), 26-29. doi:10.1007/s10643-

    009-0305-4

Snow, C. E., Barnes, W. S., Chandler, J., Goodman, I.F., & Hemphill, L. (1991).

    Unfulfilled expectations: Home and school influences on literacy.

    Cambridge, MA: Harvard University Press.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of

    individual differences in the acquisition of literacy. *Reading Research*

    Quarterly, 21, 360-206.

Stevenson, D. L., & Baker, D. P. (1987). The family-school relationship and the

    child's school performance. *Child Development, 58*, 1348-1357.

Stewart, M. T. (2004). Early literacy instruction in the climate of No Child Left

    Behind. *The Reading Teacher, 57*(8), 732-743.

Swick, K. J. (2009). Promoting school and life success through early childhood

    family literacy. *Early Childhood Education Journal, 36*, 403-406.

Tang, K. L. (1996). *Polytomous item response theory models and their applications in large-scale testing programs: A review of literature.* (Report No. RM-96-8). Princeton, New Jersey: Educational Testing Service.

Tennessee Department of Education. (2013). *Frequently asked questions about the achievement test.* Retrieved from: http://www.tn.gov/education/assessment/ach_faq.shtml

Timmons, V. (2008). Challenges in researching family literacy programs. *Canadian Psychology, 49*(2), 96-102. doi:10.1037/0708-5591.49.2.96

Thomas, M. L. (2011). The value of item response theory in clinical assessment: A review. *Assessment, 18*(3), 291-307. doi: 10.1177/1073191110374797

U.S. Bureau of Labor Statistics. (2013). Retrieved from: http://www.bls.gov/

Van der Linden, W. J., & Hambleton, R. K. (Eds.). (1997). *Handbook of modern item response theory.* New York, NY: Springer.

Velez-Ibanez, C. G., & Greenberg, J. B. (1992). Formation and transformation of Funds of knowledge among U.S.-Mexican households. *Anthropology & Education Quarterly, 23*(4), 313-335.

Vera, E. V., Israel, M. S., Coyle, L., Cross, J., Knight-Lynn, L., Moallem, I., Bartucci, G., & Goldberger, N. (2012). Exploring the educational involvement of parents of English learners. *School Community Journal, 22*(2), 183-202.

Walberg, H. J. (1984). Improving productivity of America's schools. *Educational Leadership, (41)*8, 19-27.

Wallen, N. W., Fraenkel, J. R. (Eds.). (2001). *Educational Research: A guide to the process.* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Walsh, K. (2007). Becoming part of the solution, not part of the problem. *Journal of Teacher Education, 58*(2), 117-123. DOI: 10.1177/0022487106297843

Wong, P. L. (2012). Parents' perspectives of the home-school interrelationship: A study of two Hong Kong-Australian families. *Australasian Journal of Early Childhood, 37*(4), 59-67.

Zaman, A. (2006). Parental roles in the acquisition of primary level skills: An exploratory view on the low-income Hispanic-American families with 3 and 4-year old children. *Education, 127*(1), 73-82.

Zellman, G. L., & Waterman, J. M. (1998). Understanding the impact of parent school involvement on children's educational outcomes. *The Journal of Educational Research, 91*(6), 370-380.

Zhang, J, Pelletier, J., & Doyle, A. (2010). Promising effects of an intervention: Young children's literacy gains and changes in their home literacy activities from a bilingual family literacy program in Canada. *Frontiers of Education in China, 5*(3), 409-429. doi:10.1007/s11516-010-0108-9

APPENDICES

Appendix A

Categorized Survey Questions

Category 1: Parental Support

1) My parents supported my success in elementary school.

2) My home life was stable during elementary school.

3) My parents were involved in my school activities.

4) My parents spoke negatively about my elementary school.

5) My parents held me accountable for my grades in elementary school.

6) My parents never volunteered at my elementary school.

7) My parents worked too much to be worried about my school progress.

8) My parents provided supplemental work for me at home to practice my skills.

9) My parents were proud of my progress in elementary school.

10) My parents never displayed my schoolwork at home.

Category 2: Social and Emotional Well-Being

1) I was unhappy emotionally in elementary school.

2) I had friends in elementary school.

3) My self-confidence was high in elementary school.

4) I was often left feeling hungry in elementary school.

5) I changed schools frequently during my elementary school years.

6)   I needed more discipline in my elementary school years.

7)   I enjoyed the structure of elementary school.

8)   I never got into trouble in elementary school.

9)   I was mature compared to my grade level peers in elementary school.

10)   I felt unintelligent in elementary school.

Category 3: Teachers and Staff

1)   My elementary school teachers were terrible at instruction.

2)   My elementary teachers were kind.

3)   My elementary teachers were understanding of my needs.

4)   The support staff (cafeteria, custodian, office staff) at my school were helpful.

5)   The teacher aides at my school were very mean.

6)   My principal was a good leader of my elementary school.

7)   The staff seemed to work well together in my elementary school.

8)   There were many teachers I feared during elementary school.

9)   I was considered the teacher's pet in elementary school.

10)   I worked to please all of the staff in my elementary school.

Category 4: Assignments and Curriculum

1)   I enjoyed completing homework in elementary school.

2)   I disliked the classroom assignments in elementary school.

3)   My reading skills developed terribly in elementary school.

4)   I was successful at science in elementary school.

5)   My favorite times of the day were extra curricular such as art, gym, and music.

6)   Social Studies (geography, history, government) was my best subject in elementary school.

7)   I was bored in elementary school.

8)   I received awards for great work in elementary school.

9)   I was behind academically in elementary school.

Category 5: Organization

1)   I was aware of my surroundings in elementary school.

2)   I kept track of my things well in elementary school.

3)   My desk was always messy in elementary school.

4)   I had neat handwriting in elementary school.

5)   I could navigate the cafeteria independently in elementary school.

6)   The hallway was a scary place in elementary school.

7)   I was not able to keep up with the teacher's pace in elementary school.

8)   My backpack got lost frequently in elementary school.

9)   I turned my assignments in on time in elementary school.

10)   I was considered responsible in elementary school.

Category 6: **General Attitude About School Experiences**

1) I attended school regularly in elementary school.

2) My overall elementary school experience was negative.

3) My elementary school education was adequate in laying the foundation for my future.

4) I remember my elementary school years fondly.

5) I wish to have had a different experience during my elementary school years.

6) I'm glad that I never have to return to the time when I was in elementary school.

7) I barely remember my elementary school years.

8) My elementary school experiences influenced my life negatively.

9) I wish my child could have the same elementary school experience that I did.

10) Elementary school years were of great importance in my life.

Appendix B

Elementary Experiences Scale

Informed Consent Information

Principal Investigator: Rachel Peay Cornett
Study Title: Parental Educational Experiences Survey
Institution: Middle Tennessee State University

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to email any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

1. **Purpose of the study:**
   You are being asked to participate in a research study because the researcher is testing the effectiveness of a newly developed parental education experiences survey. The purpose of the study is to see if the survey used is effective in determining if there are any correlations between parents' school experiences and their students' academic progress.

2. **Description of procedures to be followed and approximate duration of the study:**
   After checking yes on this permission form, you will complete an online survey about your own educational experiences. You will also indicate the type of profession your parent was involved in when you were a child. After the survey is completed, your student's literacy

scores (letter naming fluency, letter sounds fluency, ThinkLink, AIMSweb, and TCAP scores if available) will be matched to your data to indicate if there are any correlations between parent school experiences and their student's progress in K- 4th grade. All data, such as test scores, will be coded and kept completely confidential. No names are associated with the data, because the data will be analyzed simply for trends in the survey data overall, not individual scores.

3. Expected costs: None

4. Description of the discomforts, inconveniences, and/or possible risks that can be reasonably expected as a result of participation in this study: Very little, if any, risk is associated with participating in this study. There is a possibility of feeling some discomfort when answering difficult questions about your own childhood experiences.

5. Compensation in case of study-related injury: MTSU will not provide compensation in the case of study related injury.

6. Anticipated benefits from this study: After the completion of this study, the researcher will have data to support use of the developed parental survey in future studies, or to modify or discard Items from the survey as needed. Your participation in the study will help with the process of survey validation and is greatly appreciated.

7. Alternative treatments available: None

8. Compensation for participation: One lucky participant that completes the survey will be drawn at random to receive a $50 Visa Gift Card.

9. Circumstances under which the Principal Investigator may withdraw you from study participation: Only at your request

10. **What happens if you choose to withdraw from study participation: Your survey data will not be used in the study.**

11. **Contact Information: If you should have any questions about this research study or possibly injury, please feel free to contact the researcher Rachel Peay Cornett at rlp2j@mtmail.mtsu.edu or the Faculty Advisor, Jwa Kim at jwa.kim@mtsu.edu.**

12. **Confidentiality. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law.**

○ **I have read the above statement.**

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY:
I have read the above informed consent document and the material contained in it. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

○ No- I do not wish to participate in this study. (Clicking this link will take you out of the survey and no further actions will be taken.)

○ Yes- I wish to continue with the survey.

✱ **Guardians: List your first and last name. (*Only if you want to be entered to win $50.)**

✱ **Please indicate your gender.**
      ○ **Male**   ○ **Female**

* **List your student's first and last name. (If you have more than one student in grades K through 4th, choose your YOUNGEST student.)**

* **What school does your student attend?**

* **What grade is your student in? (This study only correlates to students in grades K - 4th.)**

* **List your student's teacher.**

* **Select which occupation best fits the occupation of your head of household when you were a child (Mercer & Lewis, 1977).**

o Unemployed, on welfare, public disability pension, social security

o Laborers in heavy manufacturing and on farms

o Laborers in mining and light manufacturing, personal service workers, equipment operators

o Operative of heavy machinery and tools, semiskilled service workers

o Skilled operative craftsmen, salaried business managers

o Highly skilled operatives, skilled craftsmen, sales and clerical workers, self-employed proprietors

o Highly skilled craftsmen, skilled clerical workers self-employed proprietors in wholesale trade or furnishings, salaried managers in retail trade or administration, certain semiprofessionals

o Highly skilled sales and clerical persons, self-employed proprietors in business services, salaried managers in general establishments, lower-level professionals

o Managers in manufacturing and transport, officials in federal administration, middle-level professionals

o Skilled managers, federal government officials, directors, higher-level professionals

THE ELEMENTARY EXPERIENCE SCALE BEGINS HERE!

* Answer options available for all questions in the digital format were as follows:

□ Strongly Disagree   □ Disagree   □ Neutral   □ Agree   □ Strongly Agree

Adults: Think back to when you were a student in elementary school and answer these questions from your own experience as a student.

1. My parents supported my success in elementary school.

2. I was unhappy emotionally in elementary school.

3. My elementary school teachers were terrible at instruction.

4. I enjoyed completing homework in elementary school.

5. I was aware of my surroundings in elementary school.

6. I attended school regularly in elementary school.

7. My home life was stable during elementary school.

8. I had friends in elementary school.

9. My elementary teachers were kind.

10. I disliked the classroom assignments in elementary school.

11. I kept track of my things well in elementary school.

12. My overall elementary school experience was negative.

13. My parents were involved in my school activities.

14. My self-confidence was high in elementary school.

15. My elementary teachers were understanding of my needs.

16. My reading skills developed terribly in elementary school.

17. My desk was always messy in elementary school.

18. My elementary school education was adequate in laying the

   foundation for my future.

19. The support staff (cafeteria, custodian, office staff) at my school

   were helpful.

20. My parents spoke negatively about my elementary school.

21. I was often left feeling hungry in elementary school.

22. I had neat handwriting in elementary school.

23. I remember my elementary school years fondly.

24. My parents held me accountable for my grades in elementary

   school.

25. I changed schools frequently during my elementary school years.

26. I could navigate the cafeteria independently in elementary school.

27. I wish to have had a different experience during my elementary school years.

28. The teacher aides at my school were very mean.

29. I was successful at science during elementary school.

30. I'm glad I never have to return to the time when I was in elementary school.

31. The hallway was a scary place during elementary school.

32. I needed more discipline during my elementary school years.

33. My parents never volunteered at my elementary school.

34. My principal was a good leader of my elementary school.

35. My favorite times of the day were extra curricular activities such as art, gym, and music.

36. My parents worked too much to be worried about my school progress.

36. I enjoyed the structure of elementary school.

38. I was not able to keep up with the teacher's pace in elementary school.

39. I barely remember my elementary school years.

40. The staff seemed to work well together in my elementary school.

41. Social Studies (geography, history, government) was my best subject in elementary school.

42. My parents provided supplemental work for me to practice my skills after school.

43. I never got into trouble during elementary school.

44. My backpack got lost frequently in elementary school.

45. My elementary school experiences influenced my life negatively.

46. There were many teachers I feared during elementary school.

47. I was bored in elementary school.

48. I turned my assignments in on time in elementary school.

49. I wish that my child could have the same elementary school experience that I did.

50. I was considered the teacher's pet in elementary school.

51. I received awards for great work in elementary school.

52. My parents were proud of my progress in elementary school.

53. I was mature compared to my grade level peers in elementary school.

54. I was considered responsible in elementary school.

55. Elementary school years were of great importance in my life.

56. I worked to please all of the staff at my elementary school.

57. I was behind academically in elementary school.

58. My parents never displayed my schoolwork at home.

59. I felt unintelligent in elementary school.

Appendix C

**MIDDLE
TENNESSEE
STATE UNIVERSITY**

April 23, 2013

Rachel Peay Cornett
Literacy Studies
Rlp2j@mtmail.mtsu.edu; jwa.kim@mtsu.edu

Protocol Title: Psychological Analysis of a Parental Educational Experiences Survey

Protocol Number: 13-292

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies for an expedited review under the 45 CFR 46.110 Category 7.

Approval is granted for one (1) year from the date of this letter for 500 participants.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance (Box 134) before they begin to work on the project.** Any change to the protocol must be submitted to the IRB before implementing this change.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Your study expires **April 23, 2014**.

Also, all research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Appendix D

January 29, 2014

Rachel Peay Cornett, Jwa Kim

Literacy Studies

Protocol Title: "Psychological Aspects of a Parental Educational Experiences Survey"

Protocol Number: 13-292

Dear Investigator(s):
I have reviewed your research proposal identified above and your requested changes. I approve of the following changes:

1. Waiver of documentation of consent due to size of sample and online distribution of survey.
2. New school district sample.
3. Change in assessment data gathered from school.
4. Additional demographic information on survey.
5. Compensation added to methodology and consent.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615)494-8918. Any change to the protocol must be submitted to the IRB before implementing this change.

You will need to submit an end-of-project report to the Office of Compliance upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your studies expire **4/23/2014.**

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the online training. If you add researchers to an approved project, please forward an updated list of researchers to the Office of Compliance before they begin to work on the project.

Please note: **all research materials must be retained** by the PI or **faculty advisor (if the PI is a student)** for at least **three (3) years after study**

completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,
Kellie Hilker
Compliance Officer/ Institutional Review Board Member Middle Tennessee State University