

## **The Impact Of Policy Driven Professional Development On Emergent Literacy Instruction**

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### **Abstract**

Professional development that increases quality classroom instruction is a concern of school administrators and professional educators. Using survey, observation, and interview methods, four rural schools in the Upper Cumberland area of Tennessee were examined to determine if professional development supported by the Reading Excellence Act promoted, hindered, or had no effect on emergent literacy instruction. Treatment group participants were teachers from two schools within the Tennessee Technological University service area that were recipients of the Reading Excellence Act grants. Control group participants were teachers from two comparable schools within the same geographic location with similar demographics. Analysis of the self-administered surveys indicated that there was a significant positive interaction between teachers receiving REA modules of professional development and familiarity with, frequency of use of, and perceived importance of REA concepts. Observations and interviews corroborated the statistical analysis. The Reading Excellence Act professional development modules have shown promise for increasing the quality of emergent literacy instruction. Preliminary studies such as this investigation suggest that continuation of the professional development component of the grant is warranted. Implications are discussed in relation to future professional development programs.

### **Introduction**

#### **Reading Excellence Act and Professional Development**

Although federal and state literacy initiatives have been affecting stakeholders in local education agencies for years, never before has a reading proposal of the magnitude of the Reading Excellence Act (REA) been distributed. In 1998, the Reading Excellence Act was passed by the legislature as an amendment to the Elementary and Secondary Education Act. It provided schools with direct financial assistance to improve reading instruction, teachers' instructional practices, and student performance through scientifically-based reading research (SBRR) (Goodman 1998, Mesmer and Karchmer 2003, Reading Excellence Act 1998). Large sums of money devoted to the improvement of emergent literacy for students in pre-kindergarten through third grade were channeled to state education agencies for distribution through competitive grants to local education agencies.

Local Reading Improvement (LRI) grants focused primarily on professional development with some funding for early childhood collaborations, tutoring, family literacy, and early grade

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transitions. Tutoring Assistance Sub-grants (TAS) provided funding for tutoring at-risk students. School systems with schools that qualified as high poverty or low performing schools could choose to apply for one or both types of Reading Excellence Act grants. The competitive process targeting the lowest performing and highest poverty schools was designed to bring professional development and tutorial assistance to those in greatest need, a unique feature of the REA legislation (Goodman 1998, Mesmer and Karchmer 2003, Roller 2000).

The second distinctive feature of the Reading Excellence Act was the precise vocabulary used (Goodman 1998, Mesmer and Karchman 2003). Never before had the act of reading been defined by the government (Mesmer and Karchman 2003). In Section 2252(4) reading is explicitly defined by the following characteristics:

1. The skills and knowledge to understand how phonemes, or speech sounds, are connected to print.
2. The ability to decode unfamiliar words.
3. The ability to read fluently.
4. Sufficient background information and vocabulary to foster reading comprehension.
5. The development of appropriate activities to construct meaning from print.
6. The development and maintenance of a motivation to read. (Reading Excellence Act, 1998, Section 2252.)

These literacy concepts of phonological awareness, decoding, fluency, vocabulary, comprehension, and motivation form the model of professional development modules prescribed for REA recipients (Mesmer and Karchmer 2003, Tennessee Reading Excellence Act 2001).

Introduction of the term “scientifically-based reading research” is the third distinctive characteristic of REA legislation. Appearing no less than 20 times throughout the bill (Goodman

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1998, Mesmer and Karchmer 2003, Roller 2003), the term specifies that “content taught in staff development sessions and programs used with children must be supported by studies using systematic methods, rigorous data analyses, valid and reliable measures, and peer-reviewed publications” (Mesmer and Karchmer 2003, p. 637). Goodman (1998) argues that the intention of the phrase was to “categorize theory, methodology, materials, staff development, family literacy, early childhood education, research methodology, teacher education and certification” and promote governmental control of these aspects (Goodman 1998, p. 5).

Some state variations in interpretation occurred despite specificity of the REA legislation (Mesmer and Karchmer 2003). In Tennessee’s interpretation of the guidelines, participating educational sites had to meet at least one of three qualifying criteria to be considered:

- (A) at least one school within the local educational agency on the Title I School Improvement Program,
- (B) the highest percentage of students receiving free and reduced meal prices within the system, or
- (C) the highest actual numbers of students receiving free and reduced meal prices within the agency (Tennessee Reading Excellence Act 2001).

Schools receiving the REA grants received training in ten prescribed modules of professional development based on scientifically-based reading research as mandated by the Tennessee State Department of Education, 90 to 100 additional hours of focused professional development on emergent literacy concepts, and the five days of generalized staff development required by the Tennessee State Board of Education. All REA recipients received regulated training on phonics, phonemic awareness, comprehension, decoding, vocabulary, fluency, spelling, schemata, alphabetic principle, and higher order thinking. Institutions of higher education applied to the

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State Department of Education for credentials to participate, then were responsible for planning and delivering staff development, as well as providing liaison services for monitoring and support. While attaining the 90 to 100 additional hours of in-service training, REA schools were encouraged to use nontraditional methods of professional development. Literacy leaders were encouraged to determine, facilitate, and monitor transfer of emergent literacy techniques in the classroom through nontraditional measures such as collaborative literacy team meetings by grade level and professional book clubs, as well as peer coaching and peer mentoring (Tennessee Reading Excellence Act 2001).

Staff development became the context for understanding and the impetus for educational reform. Educators in REA schools not only received support and encouragement in the literacy areas stressed, but also gained assistance in translating theory into classroom practice. A social constructivist perspective shaped in-service sessions by providing explicit instruction in targeted areas, scaffolding for teachers to implement ideas in their own classrooms, and reflective sessions for feedback and self analysis (Au and Carroll 1997, Hamilton and Richardson 1995, Mesmer and Karchmer 2003, Potter 2001, Wells 1993).

Due to the relatively short time between authorization and implementation of the Reading Excellence Act, empirical research on the topic is lacking. A recently published study by Mesmer and Karchmer (2003) is one of the first to scrutinize the impact of REA grants and to reflect upon lessons learned. The researchers first determined that multiple sources of data must be systematically collected to effectively evaluate professional development. Next, they found that staff development sessions should not be regarded as static requirements, but could be tailored to fit the needs of the school better. Gaps between information presented in training sessions and classroom contexts were identified by teachers, literacy leaders, and literacy liaisons

and were filled with modifications. Structure and schedules were also modified while encouraging teacher investment in reform. Mesmer and Karchmer (2003) also found that offering graduate-level credit made participation requirements more acceptable to teachers with four benefits: suitable and convenient arrangements, greater investment in the process, higher accountability, and a greater depth of activities to be performed. These researchers encourage consideration of the implications of competing programs such as other grants or mandatory school-based obligations, conflicting requirements, and burnout in teachers as they complete the strenuous necessities for REA funding. Finally, they suggest that Reading Excellence Act grants should be utilized as a format for fostering and continuing partnerships with state education agencies to both fulfill grant guidelines and respond to school needs.

It is important to note that most discussions regarding the Reading Excellence Act are inconclusive in nature due to the newness of the legislation and short amount of time for existing implementation. Lack of time between authorization and implementation make study of the REA relatively new. Mesmer and Karchmer (2003) note four generalizations from experience in participating REA schools.

1. Although wording of the federal Act does suggest similarity of implementation, the researchers found the REA guidelines adaptable to the needs and concerns of the school while meeting grant requirements.
2. They determined the procedures to be focused but not constraining.
3. REA grants also placed recipients in a position of power for advocacy and allowed participants to advance best practices and teacher empowerment.
4. Reading Excellence Act initiatives represented only one of many demands on teachers for at-risk students, resulting in greater competition for teachers' time and energy.

As new federal legislation such as Reading First and Early Reading First emerge, it is important to examine the impact of the Reading Excellence Act to provide lessons learned that may benefit those implementing No Child Left Behind initiatives (Mesmer and Karchmer 2003). The Reading Excellence Act has been applauded by some reading researchers (Slavin, 2001) and questioned by others (Allington 2001, Goodman 1998, Roller 2000, Tierney 2002). Both the imperfections and the positive influences of the REA are apparent, but as the reading community awaits long-term impact, it is advisable to consider the wisdom of the International Reading Association and Roller (2000). The Reading Excellence Act is not infallible, but reading professionals should choose to take a proactive stance in achieving maximum benefit from the opportunities afforded by the legislation (Mesmer and Karchmer 2003, Roller 2000).

### **Impact of Professional Development**

Current reform efforts not only address innovative strategies for teaching, but also seek to identify and implement an array of research-supported best practices that sustain learning of teachers (AHSA 2000, Brown 2002, Lieberman 1995). Knowledge of the characteristics of teachers is significant to professional development because it provides a foundation for diagnosis, a guide for support, and a basis for developmental growth (Burden 1989, McNergney and Carrier 1981). “Although sophistication about the process of restructuring schools and the problems of changing school culture are growing, staff learning still takes place in a series of workshops, conferences, or with the help of a long-term consultant” (Lieberman 1995, p. 591). Educators offer children a multitude of opportunities to learn that actively engage the students in experiments, simulations, and authentic activities; yet teachers are denied the same opportunities when they are expected to learn (Banner 1986, Burke 1997, Cameron 1996, Cutler and Ruopp

1993, Darling-Hammond 1996, Goldenberg and Gallimore 1991, Lieberman 1995). Professional development that facilitates true school reform demands careful consideration and long-range planning, a commitment to school goals, and the same nurturing as given to emergent students in guiding them to reach their full potential as learners (Banner 1986, Cameron 1996, Hoyle, English, and Steffy 1998, Ogle 2003). It provides appropriate time for implementation and is related to content areas. It also provides opportunities for active learning and is coherent throughout (Birman and others 2000).

Joyce and Calhoun (1994) list several advancements in professional development that have changed the role and impact of teacher training. Staff development has changed from an isolated, one shot event for only teachers to a long-term, systematic process for all school personnel. Professional development is no longer viewed as a district responsibility, but as a means of local school control with collaborations between other schools and other institutions. Adult learning theory and research-based principles now provide a basis for selection, delivery, and evaluation of professional development (Guskey 2002, Joyce and Calhoun 1994).

The qualifications of an instructor are significant factors in determining student accomplishment (Association for Supervision and Curriculum Development 1995, Darling-Hammond 1997, Ogle 2003). “Research indicates that the effects of well-prepared teachers on student achievement can be stronger than the influences of student background factors such as poverty, language background, and minority status” (Darling-Hammond 1999, p. 39). According to Jones (1998), capital spent on staff development will have a greater impact on student learning than funds spent on any other area of education. Students will become more successful learners as their instructors become better teachers. The impact of in-service training is obvious. As stated by the Learning First Alliance (2000):

There can be no more urgent agenda at this point in our quest to become a society that educates everyone. Well prepared teachers who are confident in their instruction are indispensable for children's reading success (p. 28).

### **Translating Research to Practice**

As Moats (1999, p.7) states, "a chasm exists between classroom instructional practices and the research knowledge-base on literacy development." Too often instructional applications do not reflect research-based best practice. Professional development opportunities must be provided for teachers to "be educated to identify, read, respect, and apply scientific findings of research to their practice" (Moats 1999, p.23). Through these sessions, teachers can experience "a variety of research-based instructional approaches to appropriately meet the needs of their students" (ASHA 2000, p.5). They learn how to model needed skills, modify and apply their own educational philosophies, change instructional delivery practices, and use previous experiences to help facilitate the learning of others (Queenan 1988). A lack of empirical research on the topic of professional development, and teachers' lack of awareness about educational research contribute to lack of transfer (Calhoun 2002, Jones and Lowe 1990).

Mesmer and Karchmer (2003) examined two schools receiving the Reading Excellence Act Grants. As the primary university partners for each school, they helped to plan, facilitate, administer, and evaluate the professional development opportunities available. The researchers used weekly observations, checklists for systematic review of lesson plans, analysis of teachers' written reflections, and checklists used during peer coaching to evaluate classroom implementation and new knowledge of teachers. Mesmer



and Karchmer concluded that there were six main lessons to be learned from the implementation of the REA grants at their schools:

- plans for REA implementation must be individually tailored to fit the needs of teachers,
- data must be systematically collected using multiple forms,
- staff development must be reworked to fit the needs of teachers,
- graduate-level credit for participation increases morale and contribution,
- implications of competing programs and conflicting requirements must be addressed, and
- communications with state agencies must be fostered and maintained.

### **Standards for Professional Development in Literacy**

Professional development opportunities and curricular proposals in literacy currently work either to promote or undermine the emergence of exemplary classroom teaching (Allington 2002, Mather, Bos and Babur 2001). To attain the goal of “no child left behind,” a national initiative designed to improve teacher and student preparation, educators must focus on creating substantially larger numbers of effective, expert teachers. School administrators should be devoted to creating policies to ensure that more effective teachers are created each year in their schools (Allington 2002). Educational agencies must take more responsibility for providing instructional and curricular support so that exemplary teaching becomes more common and requires less effort for professionals. Superior teaching should not have to go against the organizational structure.

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When Allington (2002) questioned high-quality literacy professionals, they credited other exemplary teachers for supporting and encouraging them to assume greater professional responsibility for the success of their students. The expert reading instructors realized that extensive reading and active instruction are critical to the development of reading proficiency and provide the opportunity for pupils to consolidate the skills and strategies teachers concentrate on developing. Outstanding reading instructors understood that professional responsibility meant choosing how to teach, what to teach, and what curricular materials to use. They rejected the low autonomy/high accountability models in favor of high autonomy/high-accountability models (Allington 2002).

Scientific-based reading research provides one with many tools to use in the development, implementation, and monitoring of quality professional development activities. Slavin, Adams, Beck, Lyons, Moats, Osborn, Fashola, Pearson, Conaty, and Pikulski (1998) outline principles for quality staff development such as:

- “...extended time for initial training that includes discussions of research on how children learn to read as well as specific instructional strategies,”
- “...extensive in class follow-up with expert teachers (who may be fellow teachers)” to see the implementation of new practice and to “discuss strengths and next steps,” and
- “...a never ending process that involves the entire school staff”

(Slavin 1998, p. 16).

Slavin et al. (1998) and Ogle (2003) also state that educators and paraprofessionals should have regularly scheduled opportunities to discuss their implementation of new methods and to share problems, solutions, and innovative ideas. Others support this conclusion, stating

that successful professional development emerges from learning communities of professionals that provide a variety of professional development opportunities, embed continual learning for all stakeholders, and create time for teacher learning, practice, and evaluation (Au and Carroll 1997, Cairn 1990, Crowther 1998, Darling-Hammond 1997, Darling-Hammond 1999, Gersten, Chard, and Baker 2000, Guskey 2002, Guskey and Sparks 1991, Joyce and Showers 1988, Showers, Joyce, and Bennett 1987, Sparks 1983, Sparks and Hirsch 1997, WestEd 2000).

Many literacy researchers recommend naturalistic settings for meetings, with presentation of scientific, research-based data (Birdyshaw, Duke, Paris, Stahl, Sulzby, Taylor, and Weber, 2001, Brown 2002, Hoffman and Pearson 2000, Learning First Alliance 2000, Mather, Bos, and Babur 2001, Snow, Burns, and Griffin 1998), constant monitoring and adjusting of beliefs in an ongoing process of self discovery (Birdyshaw and others 2001, Hoffman and Pearson 2000, Brown 2002, Learning First Alliance 2000, Ogle 2003, Slavin and others 2001, Snow, Burns, and Griffin 1998), and continuous collaborative teaming with colleagues and reading specialists (Hoffman and Pearson 2000, Learning First Alliance 2000, Ogle 2003, Snow, Burns, and Griffin, 1998). Subject material for literacy professional development varies somewhat, but prevalent themes do emerge consistently; the following topics are highly recommended for a primary focus of scientifically-based reading research:

- explicit, scaffolded instruction about research-based reading principles (Allington 2002, Au and Carroll 1997, Birdyshaw and others 2001, Brown 2002, Burns, Griffin, and Snow 1999, Fitzgerald 1999, Goodman 1998, Graves, Van Den Broek, and Taylor 1996, Moats 1999, Slavin and others 1998, Rayner, Foorman, Perfetti, Pestscky, and Seindenberg 2002, Wilkinson and Silliman 2000)

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- emergent literacy concepts (Birdyshaw and others 2001, Learning First Alliance 2000, Mather, Bos, and Babur 2001, Moats 1999, Slavin and others 1998)
- relationships among comprehension, knowledge, vocabulary, and language development (Birdyshaw and others 2001, Learning First Alliance 2000, Mather, Bos, and Babur 2001, Pinnell 1999)
- active engagement of children in a variety of literary genres (Birdyshaw and others 2001, Learning First Alliance 2000, Mather, Bos, and Babur 2001, Pinnell 1999)
- valid, performance-based assessment tools in a variety of formats (Au, Carroll, and Scheu 1997, Birdyshaw and others 2001, Burns, Griffin, and Snow 1999, Graves, Van Den Broek, and Taylor 1996, Learning First Alliance 2000, Mitchell 1995, Moats 1999, Slavin and others 1998, Wilkinson and Silliman 2000)
- topics such as phonemic awareness, letter knowledge, phonics, decoding, comprehension, core curriculum standards, and concepts of print (Au, Carroll, and Scheu 1997, Birdyshaw and others 2001, Burns, Griffin, and Snow 1999, Fitzgerald 1999, Graves, Van Den Broek, and Taylor 1996, Mather, Bos, and Babur 2001, Learning First Alliance 2000, Moats 1999, Pinnell 1999, Rayner and others 2002, Slavin and others 1998)

### **Research Questions**

The investigation was designed to answer the following concerns:

1. Does professional development as prescribed by the training modules of the Reading Excellence Act grant promote or inhibit emergent literacy instruction?

2. What elements support or hinder transfer of concepts learned in professional development to classroom instruction?
3. How can the implementation of future professional development opportunities be structured to maximize transfer to classroom practices?

### **Hypotheses**

Examination of the impact of professional development upon emergent literacy instruction required both pre- and post- investigations of treatment and control groups. Ordinal data from the Pennycuff-Reed Professional Development Survey were compiled to determine scores for the concepts of familiarity, importance, and frequency of use. The following null hypotheses were established to be tested using a split plot analysis of covariance at the .05 level of confidence.

1. There will be no significant difference between the treatment group pretest and posttest concept familiarity scores and the control group pretest and posttest concept familiarity scores.
2. There will be no significant difference between the treatment group pretest and posttest concept importance scores and the control group pretest and posttest concept importance scores.
3. There will be no significant difference between the treatment group pretest and posttest concept frequency scores and the control group pretest and posttest concept frequency scores.

### **Instrumentation**

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Three instruments were developed by the researchers in conjunction with a committee of peers to aid in the collection of data. The instruments were analyzed separately by the individual researcher's doctoral committees and were offered to the faculty at large for assessment and amendment. Revised documents were then applied in the field for both parallel studies.

The Pennycuff-Reed Confidential Professional Development Survey is a questionnaire that addresses the material in the prescribed modules of REA training with open-ended questions and Likert-scale items. Measuring perceived importance of, frequency of use of, and familiarity with key concept areas, the instrument corresponds to Kagan's idea of "the most direct technique for assessing teacher belief" (Kagan 1990, p. 424). It was used as a pre- and post- test measure for both treatment and control schools. Included were a variety of open-ended and closed-ended questions about emergent literacy instructional techniques and strategies, participation in professional development and reading, and the collaboration of professionals. Demographic information was also collected as a part of the survey process. The Pennycuff-Reed Confidential Professional Development Survey was evaluated for content and verified by both Mr. James Herman, REA Director, and Dr. Claudette Williams, Acting Assistant Commissioner and Executive Director of Curriculum and Instruction, of the Tennessee State Department of Education.

The Pennycuff-Reed Observation Instrument is based on the Tennessee model of evaluation for teachers. It includes measures to describe the classroom events in detail, including focus of the lesson, description of the environment, REA concepts exhibited, use of current standards, and description of the activities. It was implemented for three monitoring visits per teacher during the school year, at the beginning of the year, mid-term, and at the end of the year.

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Non-REA schools were monitored by both parallel researchers, while treatment schools were examined by each researcher individually.

The Pennycuff-Reed Interview Script follows the Tennessee model for evaluation of teachers including questions about reflective teaching, future alterations, and plans for growth. An adaptable design to encourage flexibility of qualitative measures was also incorporated. Responses were recorded directly on the Pennycuff-Reed Observation Instrument. They were obtained immediately following the observations. Questions included the following:

1. How do you feel about today's lesson?
2. If you could change anything about today's lesson what would it be and why?
3. What do you feel that you need to become a better teacher? What do you need to learn about or what are you interested in that would help you become a better teacher?

Initial interviews were conducted with the principal at each school within the first month of the 2002-2003 school year, following a similar flexible design. Using the Pennycuff-Reed Principal Interview Form as a guide, both researchers interviewed control school administrators at the same time before consulting with treatment school principals individually. Questions included the following:

1. Describe your school.
2. What goals do you have for your school this year?
3. What type of staff development are you providing to support your school goals?
4. How do you plan staff development?
5. What resources do you have to support staff development?
6. How do your teachers react to staff development?

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7. How do you convince your teachers to try new ideas?
8. What changes in classroom practice do you anticipate from the staff development to help increase student achievement?
9. How are teachers held accountable for the application of staff development they receive?
10. What do you hope REA will do for your school? (REA schools only)

### **Reliability and Validity of Methods**

Reliability and validity of methods were evaluated by both researchers in conjunction with recommendations of the literature and were established through use of a peer committee. The methodology and instrumentation were analyzed separately by the individual researchers' committees and were offered to the other faculty members for assessment and amendment. Revised documents and techniques were then applied in the field for both parallel studies.

Although much of the literature demonstrates a lack of empirical data on the topic of professional development, careful consideration was made to include a broad perspective of studies to counteract the more opinionated scope. Support for the researchers' chosen methodology exists in the literature. Guskey and Sparks (1991, 1996) advocated for evaluation of professional development that begins in the planning stages and continues through all stages of implementation. They also argued for the inclusion of all stakeholders including school administration. Others promoted the use of participant outcomes, such as knowledge, skills, and dispositions, and changes in responsibilities or classroom climate (Guskey n.d., Guskey and Sparks 1991, Guskey and Sparks 1996, Sparks and Richardson 1997). Evaluation of professional development should also include multiple sources of data from both quantitative and qualitative



methodology (Guskey n.d., Guskey and Sparks 1991, Guskey and Sparks 1996). Anders and Richardson (1991), Bickel and Hatstrup (1995), and Hamilton and Richardson (1995) used similar methodology by implementing observations, interviews, and debriefings. Mather and others (2001) also assessed change in teachers' beliefs, perceptions, and knowledge using a pretest/posttest survey after professional development.

### **Reliability**

Reliability of methodology was assessed across time, across different forms of measures, and across items (Whitley 2002). Consistency across time was assessed using test-retest reliability with both treatment and control groups. Assumed stability of characteristics measured by the Pennycuff-Reed Confidential Professional Development Survey was evident in the lack of significant change from the beginning of the school year to the end of the school year by control schools. Interrater reliability established consistency across forms as both researchers administered surveys and conducted observations and interviews for control schools. The researcher and the university literacy liaison for both treatment schools worked in unison to establish interrater reliability of observations and interviews by first observing and interviewing special education teachers who received REA training but were not included in the study. Consistency among items was used as an indicator of internal reliability of measures, with a reliability coefficient of .96. Results from statistical analysis were also used to assess Cronbach's alpha for the Pennycuff-Reed Confidential Professional Development Survey. Items measuring familiarity of REA concepts were obtained with a reliability coefficient of  $\alpha=.91$ ; those measuring importance of REA concepts received a reliability coefficient of  $\alpha=.94$ ; and

those measuring frequency of use of REA concepts were determined to have a reliability coefficient of  $\alpha=.94$ .

### **Validity**

Validity of methodology was increased as content evidence (Whitley 2002) was evident. Instrumentation and methodology were both relevant and representative of REA module concepts, thus demonstrating content-related evidence of validity. Content validity was established through the committee of peers and faculty evaluation, as well as responses from teachers receiving treatment. Observation and interview documentation was utilized as well.

### **Methodology**

All participants were asked to read and sign an informed consent form describing the nature of the study and their participation, as well as how the study fit within the goals of the REA grants. Participation in treatment was not optional as part of the REA grant requirements for treatment schools, and 100% of the participants had to agree to receive treatment before their school could apply for REA funds as a part of the requirements from the state of Tennessee. Responses were kept confidential. All participants were informed of confidentiality, both in writing and through group oral briefings by one of the researchers. All participants were assured of treatment in accordance with the ethical guidelines of the American Psychological Association.

The Pennycuff-Reed Confidential Professional Development Surveys were distributed to all participants, both treatment and control group members, prior to staff development for the 2002-2003 school year using a matched pairs confidential numbering system. REA schools

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received the pretest surveys in July of 2002, prior to the distribution of the first REA modules. These surveys were administered earlier than control school surveys. Pretest surveys in control schools were administered in August of 2002, as teachers reported back to educational sites for professional development. At the conclusion of the school year, the Pennycuff-Reed Confidential Professional Development Survey was administered again to treatment and control participants.

Within the first month of school, principals from both treatment and control schools were interviewed using the Pennycuff-Reed Principal Interview Form. All were interviewed on site and within the regular school day. The semi-structured format allowed for clarification with additional questions as necessary. Interviews were used to establish triangulation of survey and observation data.

Randomly selected teachers from kindergarten through third grade were observed using the Pennycuff-Reed Observation Instrument at initial, medial, and final phases of the school year. One teacher at each site from each of the four grade levels emphasized by REA was selected for naturalistic observations. All were scheduled in advance with the principal's permission and were planned to reflect the normal classroom routine. Following each observation, semi-structured interviews were conducted. REA schools provided literacy leaders or paraprofessional support for the continuance of classroom activities while the instructor met privately with the researcher. In control schools the researcher and teacher conducted the follow-up interview in the classroom with no outside support. This variability in the two groups does introduce threat to validity. It is anticipated that the answers to interview questions by the control teachers could be abbreviated or could leave out important data due to the lack of a supportive structure that would allow them uninterrupted time with the researcher.

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Schools receiving the REA grants actively participated in for ten prescribed modules as mandated by the Tennessee State Department of Education, 90 to 100 additional hours of focused professional development on emergent literacy concepts, and the five days of generalized staff development required by the Tennessee State Board of Education. Teachers were compensated by the REA grant funds for all professional development beyond the five days of generalized staff development. All treatment participants received regulated training on topics including phonics, phonemic awareness, comprehension, decoding, vocabulary, fluency, spelling, schemata, alphabetic principle, and higher order thinking. Nontraditional methods of training were encouraged in the REA schools while attaining the 90 to 100 additional hours of in-service training. Literacy liaisons were provided by the higher education agencies that facilitated the initial ten modules. They maintained on-site visits and observations in each participating classroom and assisted literacy leaders in implementation of other professional development opportunities. Literacy leaders were encouraged to determine, facilitate, and monitor transfer of emergent literacy techniques in the classroom through nontraditional measures such as collaborative literacy team meetings by grade level and professional book clubs as well as peer coaching and peer mentoring. Non-REA groups received only the five specified days of general professional development required by the state.

The Pennycuff-Reed Confidential Professional Development Survey was administered as a posttest after completion of the prescribed modules of training and towards the conclusion of the 2002-2003 school year. Administered during regularly scheduled faculty meetings in March and April of 2003, the posttest data were compiled for statistical and qualitative analysis. Preliminary results were shared in both treatment schools during focused interviews. Stakeholders of the local educational agencies, including administrators, instructors, parents, and

students, were encouraged to supply individual perspectives to add thick description for qualitative analysis.

### **Participants**

Four rural elementary schools in the Upper Cumberland area of Tennessee were asked to participate as part of an equivalent matching, purposive sample. Chosen from a consortium of those eligible for the Reading Excellence Act, participating educational sites met at least one of three qualifying criteria to be considered:

- (A) at least one school within the agency on the Title I School Improvement Program,
- (B) the highest percentage of students receiving free and reduced meal prices within the system, or
- (C) the highest actual numbers of students receiving free and reduced meal prices within the agency.

All four schools were selected from within the Tennessee Technological University service area and were qualified to apply for REA funds. REA schools were two of the five recipients of the REA grants, and control schools were matched based on comparable demographics, geographic locations, and goodness of fit.

REA schools Jackson Elementary and Johnson Elementary were awarded funding from the Reading Excellence Act grants and received ten days of prescribed professional development. Both schools are relatively small in size, with high free and reduced lunch rates and consistently low performance on state mandated standardized tests in areas of reading and language arts. Both schools have little to no racial or ethnic diversity.

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Jackson Elementary is a small, rural school isolated from the rest of the county by geographic location and a change in time zone. With a student population of only 166 children in kindergarten through eighth grade and five teachers for kindergarten through third grade, it is comparable to the Non-REA School, Polk Elementary. Jackson Elementary has a free/reduced lunch rate of 64.9%. At Jackson Elementary 25.2% of students are tested for special education services. The school populace is homogenous with 98.9% of students being Caucasian. The 2001 and 2002 Tennessee Report Card achievement scores indicate that the school was failing in the areas of reading and language arts, and the school had been placed on the Title I School Improvement Program by the Tennessee State Department of Education.

With only 518 students in kindergarten through eighth grade and eight teachers assigned to kindergarten through third grade, Johnson Elementary was comparable to Non-REA School, Hull Elementary. Title I funds were granted on the basis of a 70.2% free/reduced lunch rate. Ninety-nine percent of students were from Caucasian backgrounds. Achievement was low, with 15.5% of the school population tested for special education services and deficient grades in reading and language arts as indicated by the 2001 and 2002 Tennessee Report Card.

Non-REA schools Polk Elementary and Hull Elementary were selected as equivalent matches for the treatment schools. Both schools were eligible for the Reading Excellence Act grants but did not receive funding as a result of the decision not to apply for funding in the case of Hull Elementary or to remove the school from the state mandated Title I school improvement program in the case of Polk Elementary. Both schools are relatively small in size with high free and reduced lunch rates, and consistently low performance on state mandated standardized tests in areas of reading and language arts. Both closely matched demographics of treatment schools. Individual demographics were as follows.

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Polk Elementary has 206 Caucasian students in kindergarten through eighth grade with only five teachers in kindergarten through third grade. At Polk Elementary 91.7% of students received a free or reduced lunch rate. The 2001 Tennessee Report Card data indicated low academic performance, with 24.8% tested for special education services, a failing grade in reading, and a deficient grade in language arts. Some progress was made in 2002, with the Tennessee Report Card indicating deficient grades in reading and language arts. The school had chosen not to participate in the state mandated Title I School Improvement Plan.

Hull Elementary was comparable to Johnson Elementary, with 830 students in kindergarten through eighth grade and fifteen teachers in kindergarten through third grade. Caucasian students represented 99.3% of the student population, and 65.7% of students participated in the free and reduced lunch rate program. While only 8.5% of students were tested for special education, Hull Elementary received deficient scores in both reading and language arts on the 2001 Tennessee Report Card. In 2002, the Tennessee Report Card indicated improvement in language and reading with grades of C, but Hull Elementary was still not meeting state standards.

Thirty-eight participants from REA Schools Jackson Elementary and Johnson Elementary and Non-REA Schools Polk Elementary and Hull Elementary (37 females and 1 male) were asked to participate as a part of an intact, purposive sample. The participants ranged in age from 60-69 to 20-29 years with a mean age of 34 years ( $SD = 1.02$ ). Years of teaching experience ranged from more than 30 years to fewer than five years with an average of 9 years ( $SD = 1.15$ ). A variety of highest educational attainment was also present with all participants holding a bachelor's degree or higher degree. The majority of participants had some hours past a bachelor's degree but no master's degree ( $SD = 1.1$ ).

## Findings

For purposes of analysis, all subgroupings of items relating to specific criteria of familiarity with, frequency of use of, and perceived importance of REA concepts were assessed as grouped by the Pennycuff-Reed Professional Development Survey. Survey items Ia through Icc were categorized as familiarity, frequency, and importance. Likert-scale scores were tabulated and averaged for each category. Means and standard deviations of scores relating to familiarity with, frequency of use of, and importance of REA concepts by category are reported in Table 1.

Pretest and posttest familiarity, frequency, and importance scores were analyzed in a 2 (REA schools versus non-REA schools) X 3 (familiarity with, frequency of use of, and importance of REA concepts) within-subjects analysis of covariance. It was performed on the subjects' perceived implementation of REA concepts, using familiarity with, frequency of use of, and importance of REA concepts as covariates. There was a significant effect for REA treatment versus standard professional development on familiarity with REA concepts [ $F(1,36)=10.95$ ,  $MSe=0.09$ ,  $p=.002$ ]. The treatment effect for frequency of use of emergent literacy strategies presented in REA professional development modules was significant [ $F(1,36)=8.98$ ,  $MSe=0.09$ ,  $p=.005$ ]. The difference in perceived importance of REA concepts was also significant between REA and non-REA schools [ $F(1,36)=10.12$ ,  $MSe=0.06$ ,  $p=.003$ ].

## Supporting Data

Systematic organization of transcripts, field notes, and other documentation was continuously performed throughout the study for the qualitative analysis. As data were collected and investigated, common themes developed. Themes were categorized as new information was



collected with open coding, axial coding, and selective coding. Open coding provided the impetus for examining, comparing, and categorizing data. Axial coding made connections between categories, and selective coding (Strauss and Corbin 1990) related information to help validate relationships and establish triangulation.

The Pennycuff-Reed Observation Instrument allowed the researchers to describe the classroom events in detail, including focus of the lesson, description of the environment, REA concepts exhibited, use of current standards, and description of the activities. The Pennycuff-Reed Interview Script focused on questions about reflective teaching, future alterations, and plans for growth. Based on instrumentation and common themes, the researcher has chosen to provide qualitative analysis and thick description in four categories: environmental description, REA concepts exhibited, methods and strategies for instruction, and use of current standards.

### **Environmental Description**

Both treatment and control schools had prominent exhibits of student work and environmental print in the classroom. However, in Non-REA Schools Polk Elementary and Hull Elementary the majority of environmental print was related to functional activities, such as classroom management, and was relatively static. In REA Schools Jackson Elementary and Johnson Elementary environmental print was focused on student work and was changed frequently according to topic studied. Graphic organizers were present in all four settings, yet REA Schools Jackson Elementary and Johnson Elementary had greater amounts of different types displayed that related to the focus of the lessons observed. Word walls were prominent in Jackson Elementary, with every classroom observed displaying or utilizing word wall strategies during observations. REA schools also had greater amounts of reading material for children,

such as big books, popular trade books, and child-created books in areas designated for reading with supplies of pillows or rugs. Classroom climate in all four schools was positive and encouraging. Teachers in both REA Schools said that REA professional development modules had helped promote a positive classroom environment for all learners. A first grade teacher at Jackson Elementary said, “This training has really helped me to be a better teacher of reading. I think I’m able to connect to the skills and concepts that each child needs a little better. My children are less afraid to make mistakes. They’re becoming risk-takers!”

### **REA Concepts Exhibited**

Both treatment and control schools expressed high interest in literacy-related activities, with many teachers confessing that they spent more time on reading than any other subject. In both Non-REA Schools Polk Elementary and Hull Elementary teachers incorporated many REA concepts even though they had not been exposed to the professional development modules. However, both control schools approached the REA concepts in a very traditional, structured format. Students in control classrooms were more likely to be involved in a traditional basal reader program with a scripted or semi-scripted design. Many visits to control schools resulted in observing students completing workbook pages independently at their desks, then either waiting for the teacher to grade them orally or taking turns going to the teacher’s desk to receive feedback. Students in REA School Jackson Elementary and REA School Johnson Elementary were more likely to be immersed in active participation based on modeling while utilizing higher order thinking skills, either with partners or small groups. Students at treatment schools were participating in language experience approach activities, creating authentic texts, interacting with word walls, and writing in journals both individually and as whole classes. A third grade teacher

at Johnson Elementary said, “Round robin reading just doesn’t work for my kids anymore. Now that they know how fun partner reading is, they won’t go back...and that’s fine with me.” Several observations at Non-REA Schools Polk and Hull were conducted during formal assessment of students using traditional formats. In REA School Johnson Elementary several teachers were performing informal assessment using ongoing methods such as anecdotal notes and running records during observations.

### **Methods and Strategies for Instruction**

Non-REA School Polk Elementary, REA School Jackson Elementary, and REA School Johnson Elementary all shared the same basal reading series, and interpretation of strategies for instruction was differentiated, depending on whether the schools had the REA professional development or did not. In both Non-REA School Polk Elementary and Non-REA School Hull Elementary teachers were more likely to follow the scripted format of a five-day basal reading lesson with little deviation from the workbook or suggested activities. Comprehension and vocabulary were the most common focuses of lessons, with the majority of instruction occurring in a workbook format. REA Schools were more likely to use popular trade books in big books and individual readers and were more likely to use the basal series as a supplemental material. In basal lessons at treatment schools, teachers were more likely to use Four Blocks strategies, graphic organizers, language experience approaches, reading logs, and journal writing. Instructors with REA training were also more likely to incorporate programs such as *Sing, Spell, Read, and Write* to teach phonics or to use supplementary materials. As a first grade teacher at REA School Johnson Elementary exclaimed, “I used to dread that phonics workbook, but you

saw how my kids loved the songs [in *Sing, Spell, Read and Write*]. They sing them even when they're on the playground.”

### **Use of Current Standards**

As part of the Pennycuff-Reed Interview Script, teachers from both treatment and control schools were asked to identify the literacy standards utilized in lessons observed. Instructors who had been teaching for a number of years could identify skills from the previous Tennessee Curriculum Standards guide, commonly called “The Blue Book,” but neither older teachers nor younger teachers from either treatment or control schools could identify current standards that matched the lessons they had just taught. Although REA professional development modules covered concepts in literacy standards, at no time did the training specify standards or provide a copy of standards for educators. At both Polk Elementary and Jackson Elementary the researcher was told that one copy of the standards is available for teachers to check out in the school library, but teachers are not provided a copy of the standards or instructed in how to locate them on the Internet. The principals at all four schools mentioned increasing standardized test scores as a school goal or as a topic for in-service, but only the principal at Johnson Elementary mentioned providing professional development on literacy standards.

### **Limitations**

Internal, external, construct, and statistical threats to validity were carefully considered. Non-REA measures were implemented early in the development of the study to alleviate problems. All schools involved were chosen because of historically low performance on measures of reading and language arts achievement and high at-risk factors. Performance may

appear to increase because of the treatment when in fact the low performance characteristics of the schools leave no room for anything but progression toward the norm. It is anticipated that inclusion of the pre-treatment survey may alleviate some of this threat to validity. Because the researchers served as REA grant writers and reading consultants for two of the school systems involved, bias is possible. Some controlling measures were inclusion of other reading professionals in the decision making processes and statistical analyses, as well as the utilization of a common instrument for measurement.

Student scores were excluded from the study due to confounding variables present in the school systems. In Tennessee standardized testing is mandated for only students in third grade and beyond. Some school systems choose to participate in the statewide Terra Nova testing for lower grades. There was no consistency of student testing in the four schools studied. Three schools used standardized testing for students in first grade and beyond, while a fourth school tested only second graders and above. As the study revolved around teachers of kindergarten through third grade, scores were not available for all children. The researcher also has professional ethics issues with the use of standardized testing for young children.

Because schools selected for treatment all have demographic and performance limitations, results may be skewed. Because all were low performing, improvement may be indicated artificially. Selection of matched control groups should reduce the risk. Triangulation occurred through the use of common questionnaires, observation forms, and interviews. Limited demographic variability of ethnic background considerably reduces the generalizability of this study; however, it is significant for the reader to understand that the demographics are typical for the Upper Cumberland area of Tennessee. The limited availability of REA grant recipients in the Tennessee Technological University service area and the small size of those schools restricted

the number of eligible participants. As a result, the population survey is representative of the geographic location, but may not be generalizable to the general population.

### **Summary of Findings**

The purpose of the research was to determine if the professional development modules prescribed by the Reading Excellence Act grant promoted, did not affect, or inhibited emergent literacy instruction. The research presented was conducted at four rural elementary schools in the Upper Cumberland area of Tennessee during the 2002-2003 school year. Using both qualitative and quantitative analysis, instructors at two control and two treatment schools were surveyed, observed, and interviewed to establish triangulation. Thick description was provided to depict the school context as well as the stakeholders' perceptions. Data analysis was facilitated by both parametric statistics and Strauss and Corbin's (1990) qualitative analysis techniques.

The analysis of covariance showed that teachers receiving professional development in REA concepts did tend to report being more familiar with, use more frequently, and recognize the importance of emergent literacy concepts than teachers that did not receive staff development training in those areas. REA Schools did differ in reported familiarity, frequency of use of, and perceived importance of REA concepts as compared to Non- REA Schools. Significant differences were found in REA Schools for the reported familiarity of, frequency of use of, and importance scores of REA concepts as compared to Non-REA Schools. Results were corroborated by documentation from observations, interviews, and focus groups discussions.

### **Conclusions**

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Although many discussions regarding REA in previous research have been inconclusive in nature, the present data are congruent with previous literature that suggest that professional development can influence classroom instruction (Anders and Richardson 1991, Darling-Hammond 1997, Darling-Hammond 1999, Goldenberg and Gallimore 1991, Guskey 1986, Hamilton and Richardson 1995, Hirsch and Ponder 1991, Learning First Alliance 2000, Mesmer and Karchmer 2003, Renyi 1998). This finding answered the first research question that professional development as prescribed by the training modules of the Reading Excellence Act does seem to promote emergent literacy instruction based upon documentation gathered. Professional development is crucial for every teacher to be successful in every teaching scenario (Cameron 1996, Darling-Hammond 1996, Jones 1998, Sykes 1996). Too often professional development opportunities are presented in the form of “one shot workshops” with no provisions for sustainable change (Banner 1986, Burden 1989, Cameron 1996, Darling-Hammond 1996, Goldenberg and Gallimore 1991, Guskey and Huberman 1995, Lieberman 1995, McNergney and Carrier 1981). A third grade teacher at REA School Jackson Elementary agrees stating, “All this [REA] training really helped me. Before we had the [REA] training there were things I wanted to try, but didn’t have time for or didn’t know that I should. My kids are better readers and writers because of it.”

REA-supported professional development reflected the literature substantiating introduction, maintenance, and assimilation of learning for educators, suggesting the answer to the second research question regarding elements that support transfer of concepts learned in professional development to classroom instruction (Birman and others 2000, Goldenberg and Gallimore 1991, Lieberman 1995, Stein, Smith, and Silver 1999). Professional development encouraged educators to implement the same learning principles implemented for children in

their own education (Banner 1986, Burke 1997, Cameron 1996, Cutler and Ruopp 1993, Darling-Hammond 1996, Goldenberg and Gallimore 1991, Lieberman 1995). REA concepts taught in professional development reflected research and facilitated true school reform through thoughtful, long-range planning, a commitment to school goals, carefully implemented follow-up activities, and the same nurturing as given to emergent students in guiding them to reach their full potential as learners (Banner 1986, Cameron 1996, Hoyle, English, and Steffy 1998, Ogle, 2003). In the words of a second grade teacher at REA School Jackson Elementary, “It’s been great having Debbi [the school literacy leader] free to help us this year. If we need something, she gets it for us, whether it’s more in-service on a topic we’re trying out or materials like graphic organizers. She’s been in our classrooms helping our kids and us with all this. It’s been great.” A first grade teacher at REA School Johnson Elementary echoed the same beliefs by stating, “These in-services have been geared to what we need in our classrooms. They gave us hands-on activities to really use in our classrooms, and then they helped us to implement them. They really listened to what we needed and wanted.”

### **Recommendations**

Professional development that increases quality classroom instruction is a concern of school administrators and professional educators. The subsequent recommendations provide possible direction for answering the third research question. Future professional development opportunities can be structured and implemented to maximize transfer to classroom practice in the following ways.

1. The presentation format of traditional professional development is no longer effective. Teachers are not satisfied with “sit and get” workshops that take place



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in a school auditorium for a few hours. Traditional activities do not provide the time, the activities, or the content needed for increasing knowledge, skills, and dispositions that promote sustainable change (Birman and others 2000). Reformed professional development opportunities provide longer periods of time for interaction and active learning with nontraditional formats such as professional book clubs, peer coaching, and mentoring.

2. Collective participation is vital for effective staff development. Adult learners must be actively involved in all aspects of professional development from determining objectives and setting purposes to selecting content, activities, and assessment (Wood, Killian, McQuarrie, and Thompson 1993). Teachers must be involved at all levels for professional development to be successful.
3. Transfer of professional development to classroom practice must be planned for, scaffolded, and monitored with proper allocations of and commitments to resources to be effective (ASHA 2000, Brown 2002, Crowther 1998, Guskey and Peterson 1995, Zepeda 1999). Tasks that are procedurally embedded within professional responsibilities are most effective when paired with evaluation and feedback on implementation (Guskey 1997).
4. Standards for staff development should be identified and implemented from the beginning of the planning process throughout execution and evaluation (Brown 2002, Guskey and Sparks 1996, Hirsch and Sparks 1999, Sparks 2001). The revised National Staff Development Council's Standards for Professional Development (2001) provides guidelines for local education agencies in centering learning communities around quality staff development.

5. Impediments to successful professional development should be identified and eradicated (Adelman and Taylor 1998, Barth 2001, Bickel and Hatstrup 1995, Calhoun 2002, Dillion-Peterson 2000, Guskey and Huberman 1995, Jones and Lowe 1990, Mesmer and Karchmer 2003). A clear mission statement should be created that describes a shared vision and time should be provided for training and support of the collaborative team with defined roles and responsibilities (Adelman and Taylor 1998).

Given the confounding variables present, it is important to acknowledge the complex relationship between factors of successful professional development and classroom practice. It is expected that schools receiving extra money, support, training, and personnel would report using new techniques and the perceived importance of such techniques more than schools that do not. The lack of willingness of Non-REA schools to apply or participate indicates a lack of motivation or commitment that may confound results when comparing their results to the documented motivation and commitment of teachers in the REA schools. Because of flaws inherent in the design of the study, the administration of the grant, and the parameters of operation, conclusions should be viewed cautiously until further research can be performed.

The Reading Excellence Act professional development modules have shown promise for increasing the quality of emergent literacy instruction. Preliminary studies such as this investigation, anecdotal records, testimonials from stakeholders, and analysis of documentation suggested that continuation of the professional development component of the grant was warranted. The author intends to continue research in this area to provide a full description and analysis of the development and validation of the REA professional development components. The researcher recommends conducting a pilot study with instrumentation before

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implementation, having a team of trained raters to observe and interview, and making provisions for classroom coverage so Non-REA teachers can be interviewed outside of their classrooms. Additional research is necessary to fully examine the impact of REA professional development upon student achievement and longitudinal change in emergent literacy instruction.

Table 1

**Perception of REA Concepts**

| Criteria         | REA Group |           |    | Non-REA Group |           |    |
|------------------|-----------|-----------|----|---------------|-----------|----|
|                  | <u>M</u>  | <u>SD</u> | n  | <u>M</u>      | <u>SD</u> | n  |
| Pre-Familiarity  | 2.93      | .45       | 17 | 3.16          | .43       | 21 |
| Post-Familiarity | 3.61      | .33       | 17 | 3.37          | .31       | 21 |
| Pre-Frequency    | 2.78      | .54       | 17 | 3.04          | .41       | 21 |
| Post-Frequency   | 3.29      | .30       | 17 | 3.14          | .36       | 21 |
| Pre-Importance   | 3.10      | .46       | 17 | 3.22          | .35       | 21 |
| Post-Importance  | 3.56      | .45       | 17 | 3.14          | .30       | 21 |

**Table 2**

**Tests of Between-Subjects Effects for Familiarity**

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| <b>Source of Variation</b> | <b>SS</b>   | <b>DF</b> | <b>MS</b>  | <b>F</b>   | <b>Sig of F</b> |
|----------------------------|-------------|-----------|------------|------------|-----------------|
| <b>Within Cells</b>        | <b>7.15</b> | <b>36</b> | <b>.20</b> |            |                 |
| <b>Group</b>               | <b>.00</b>  | <b>1</b>  | <b>.00</b> | <b>.00</b> | <b>.963</b>     |

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**Tests Involving Within-Subject Effect for Familiarity**

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| <b>Source of Variation</b>  | <b>SS</b>   | <b>DF</b> | <b>MS</b>   | <b>F</b>     | <b>Sig of F</b> |
|-----------------------------|-------------|-----------|-------------|--------------|-----------------|
| <b>Within Cells</b>         | <b>3.34</b> | <b>36</b> | <b>.09</b>  |              |                 |
| <b>Familiarity</b>          | <b>3.77</b> | <b>1</b>  | <b>3.77</b> | <b>40.55</b> | <b>.000</b>     |
| <b>Group by Familiarity</b> | <b>1.02</b> | <b>1</b>  | <b>1.02</b> | <b>10.95</b> | <b>.002</b>     |

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**Table 3**

**Tests of Between-Subjects Effects for Frequency**

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| <b>Source of Variation</b> | <b>SS</b>   | <b>DF</b> | <b>MS</b>  | <b>F</b>   | <b>Sig of F</b> |
|----------------------------|-------------|-----------|------------|------------|-----------------|
| <b>Within Cells</b>        | <b>8.95</b> | <b>36</b> | <b>.25</b> |            |                 |
| <b>Group</b>               | <b>.05</b>  | <b>1</b>  | <b>.05</b> | <b>.18</b> | <b>.673</b>     |

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**Tests Involving Within-Subject Effects for Frequency**

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| <b>Source of Variation</b> | <b>SS</b>   | <b>DF</b> | <b>MS</b>   | <b>F</b>     | <b>Sig of F</b> |
|----------------------------|-------------|-----------|-------------|--------------|-----------------|
| <b>Within Cells</b>        | <b>3.20</b> | <b>36</b> | <b>.09</b>  |              |                 |
| <b>Frequency</b>           | <b>1.77</b> | <b>1</b>  | <b>1.77</b> | <b>19.96</b> | <b>.000</b>     |
| <b>Group by Frequency</b>  | <b>.80</b>  | <b>1</b>  | <b>.80</b>  | <b>8.98</b>  | <b>.005</b>     |

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**Table 4**

**Tests of Between-Subjects Effects for Importance**

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| <b>Source of Variation</b> | <b>SS</b>   | <b>DF</b> | <b>MS</b>  | <b>F</b>   | <b>Sig of F</b> |
|----------------------------|-------------|-----------|------------|------------|-----------------|
| <b>Within Cells</b>        | <b>8.71</b> | <b>36</b> | <b>.24</b> |            |                 |
| <b>Group</b>               | <b>.07</b>  | <b>1</b>  | <b>.07</b> | <b>.27</b> | <b>.606</b>     |

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**Tests Involving Within-Subject Effects for Importance**

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| <b>Source of Variation</b> | <b>SS</b>   | <b>DF</b> | <b>MS</b>   | <b>F</b>     | <b>Sig of F</b> |
|----------------------------|-------------|-----------|-------------|--------------|-----------------|
| <b>Within Cells</b>        | <b>2.26</b> | <b>36</b> | <b>.06</b>  |              |                 |
| <b>Importance</b>          | <b>1.47</b> | <b>1</b>  | <b>1.47</b> | <b>23.48</b> | <b>.000</b>     |
| <b>Group by Importance</b> | <b>.63</b>  | <b>1</b>  | <b>.63</b>  | <b>10.12</b> | <b>.003</b>     |

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Published by the Forum on Public Policy

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