THE IMPACT OF RESPONSE TO INTERVENTION (RTI) ON MEASURE OF ACADEMIC PROGRESS (MAP) ASSESSMENT FOR LANGUAGE ARTS IN GRADES 1-3

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THE IMPACT OF RESPONSE TO INTERVENTION (RTI) ON MEASURE OF ACADEMIC PROGRESS (MAP) ASSESSMENT FOR LANGUAGE ARTS IN GRADES 1-3

A Field Study

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The College of Graduate Studies

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In Partial Fulfillment

Of

The Requirements for the Degree

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Anna T. Goode

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To the College of Graduate Studies:

We are submitting a field study written by Anna T. Goode entitled "The Impact Of Response To Intervention (RTI) On Measure Of Academic Progress (MAP) Assessment For Language Arts In Grades 1-3". We have examined the final copy of this field study for form and content. We recommend that it be accepted in partial fulfillment of the requirements for the degree of Education Specialist in Administration and Supervision.

Dr. Gary Stewart, Committee Chairperson

Dr. Benita Bruster, Committee Member

Dr. Gina Grogan, Committee Member

Accepted for the Graduate and Research Council

Dean, College of Graduate Studies

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DEDICATION

I would like to dedicate the completion of this project to my loving husband, Troy Goode, who has given me needed time by caring for our three children so I may complete assignments.

This project is dedicated to my three wonderful children who inspire me to continue my education in hopes that they will cherish the years they have to come in their educational career.

This project is also dedicated to my wonderful mother who has helped me to understand that nothing in life comes easy, but through hard work and determination, anything is possible. Without her love and support, I would not have been able to complete this journey. These values and a strong work ethics have been ingrained in me since I was a little girl. I would like to thank you, from the bottom of my heart, for all the opportunities you have provided and all the strength you instilled in me. Mom, your commitment to the things in life that are truly important will never be forgotten.

Lastly, this project is also dedicated to my "sister" Rene' Keesler, who always believed in me. Her commitment to education continues to amaze me and I will always look up to her. Thanks for your support and encouragement through this entire process. I would not be here without you!

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I would also like to thank Dr. Benita Bruster and Dr. Gina Grogan for their help and assistance and service on my committee that allowed me to complete this field study and the Educational Specialist Degree.

ABSTRACT

ANNA T. GOODE. The Impact Of Response To Intervention (RTI) On Measure Of Academic Progress (MAP) Assessment For Language Arts In Grades 1-3 (Under the direction of DR. GARY STEWART.)

The purpose of this field study was to examine the effects of Response to Intervention (RTI) on Measure of Academic Progress (MAP) assessment in the area of Language Arts in grades one through three, and to determine if certain subgroups benefited after participating in RTI.

The demands on school systems with No Child Left Behind Act of 2001 (NCLB) and the reauthorization of Individuals with Disabilities Education Improvement Act of 2004 (IDEA), have educators searching for new ways to teach in the classroom. To effectively teach children in the classroom, instruction must include the use of strategies and standards to help make learning more meaningful and purposeful for students. For many years, teachers have been adjusting and monitoring students' work to make sure that it fits the individual student's needs. Teachers that continuously monitor students' learning with formative classroom assessments are provided with ongoing feedback that is necessary to make adjustments in learning (Little, 2012). These instructional strategies are vital to the success of the students and how they perform on mandated assessments.

This research study was conducted to evaluate the impact of Response to Intervention (RTI) on the Measure of Academic Progress (MAP) achievement test. This study hypothesized that there is no statistically significant difference on MAP scores before and after a student participates in RTI. There is no statistically significant difference on MAP scores before and after a student participates in RTI based on gender.

There is no statistically significant difference on MAP scores before and after a student participates in RTI based on ethnicity.

The data have revealed positive benefits for African-American and male primary students in literacy outcomes after participating in the RTI model. Former research and the findings of this study suggest that all primary students could benefit from participating in the RTI model. Research should be conducted to assess the impact of the RTI model in schools for African-American and males that are at-risk populations.

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CHAPTER I

Introduction

Statement of the Problem

Educators have one goal in mind as they start each day of school - improving learning and ensuring positive learning outcomes for their students. The pressure of producing successful students who are competitive in the global world weighs on the shoulders of educators every day. No Child Left Behind (NCLB) 2001 and Individuals Disabilities Education Act (IDEA) 2004 have mandated the use of Response to Intervention (RTI) to help improve student achievement (Koltz & Canter, 2007).

The No Child Left Behind Act of 2001 (NCLB) and the reauthorization of Individuals with Disabilities Education Improvement Act (IDEA) 2004 have changed the requirements of the public school system's way of educating children. In order to make students ready for this interconnected competitive world, students need to be educated in a way that they are successful in school and beyond school (Hurd, 2011). The challenge for teachers is how to help those identified as at-risk. Educators need to ensure that these students get help so that they may also be successful, productive citizens.

Educators must develop the necessary skills to strengthen their effectiveness in the classroom so that student performance improves on state mandated achievement tests. They must use strategies that are beneficial to each student. Teachers need to make learning meaningful to the students on their own level so that they can improve performance. Research has shown that early intervention is necessary to improve student achievement for all students (Fuchs, Mock, Morgan, & Young, 2003).

Purpose of the Study

The purpose of this study is to determine if Response to Intervention (RTI) has an impact on the Measure of Academic Progress (MAP) Standardized Test. This study will be a comparison of the MAP scores of students who are participating in the RTI program with the MAP scores of students who are not participating in RTI. By comparing the MAP scores of these two groups, the effectiveness of RTI can be determined. Many educators will be interested to see if the early identification in kindergarten or first grade for the RTI program has a positive outcome on student achievement.

Significance of the Study

No Child Left Behind (NCLB) 2001 and Individuals Disabilities Education Act of (IDEA) 2004 have mandated the use of RTI in districts to help improve student achievement (Koltz & Canter, 2007). Students are expected to know a wide range of words in order for them to comprehend stories that they read or hear. Teachers must use appropriate research-based instructional strategies for students to be successful in the classroom. These strategies help teachers complete their work to a higher standard while, at the same time, helping students become better thinkers and learners (Silver, Strong, & Perini, 2007). Teachers need to provide ample opportunities for students to use learning strategies. The RTI model is a research-based approach that uses more effective instruction earlier for students who experience difficulty learning to read (National Dissemination for Children With Disabilities [NICHCY], 2012).

Research Questions

These are the questions generated to guide this field study:

1. Is there a significant difference in MAP scores for students participating in RTI as compared to those of students not participating in RTI?
2. Is there a significant difference in MAP scores based on gender for students participating in RTI as compared to those of students not participating in RTI?
3. Is there a significant difference in MAP scores based on ethnicity for students participating in RTI as compared to those of students not participating in RTI?

Hypotheses

1. When comparing MAP scores for students participating in RTI to those of students not participating in RTI, the difference will be statistically insignificant.
2. When comparing MAP scores based on gender for students participating in RTI to those of students not participating in RTI, the difference will be statistically insignificant.
3. When comparing MAP scores based on ethnicity for students participating in RTI to those of students not participating in RTI, the difference will be statistically insignificant.

Limitations

1. This study included archival assessment information for language arts of students in grades 1-3 in a school that used the RTI model.
2. Students were excluded from the study if they had not participated in all three testing periods of the MAP achievement test.
3. This study was conducted using assessment results from two schools in Hopkinsville, Kentucky. The sample size was small and may affect the results.

Assumptions

1. All students performed their best on test.
2. RTI strategies were used properly with the students who were identified as at-risk.
3. The assessments were administered the same for all students.
4. Each grade level had equal time between testing periods, and therefore had equal exposure to RTI.
5. Teachers incorporating RTI were equal in their ability and enthusiasm to use it effectively for their students.

Definition of Terms

All definitions are according to interpretation from Wikipedia Online.

1. RTI - Response to Intervention is a process where many schools are using early intervention strategies across the United States to help children who are struggling academically or behaviorally.

2. MAP assessment - Measure of Academic Progress is a computerized adaptive test which helps teachers, parents, and administrators improve learning for all students and make informed decisions to promote a child's academic growth.

3. IDEA - Individuals Disabilities Education Act is a United States federal law that governs how states and public agencies provide early intervention, special education, and related services to children with disabilities.

4. NCLB - No Child Left Behind Act is a federal law that represents legislation that attempts to accomplish standards-based education reform.

5. Interventions - These are designed to identify and treat learning difficulties as early as possible in order to prevent more serious disability, ensure the maximum growth and development of each child, and assist families as they raise a child with learning difficulties.

6. At-risk - This term refers to a student who, by virtue of their circumstances, is statistically more likely than others to fail academically.

7. Action Research - This includes the use of techniques of social and psychological research to identify social problems in a group or community coupled with active participation of the investigators in group efforts to solve these problems.

CHAPTER 2

Review Of Literature

Introduction

Educators have one goal in mind as they start each day of school, improving learning and ensuring positive learning outcomes for their students (Boynton & Boynton, 2005). The pressure of producing successful students who are competitive in the global world weighs on the shoulders of educators every day. With No Child Left Behind Act of 2001 (NCLB) and the reauthorization of Individuals with Disabilities Education Improvement Act (IDEA) 2004 (Koltz & Canter, 2007), educators initiated a new way to teach in the classroom. Effectively teaching children in the classroom includes the use of instructional strategies and standards that help make learning more meaningful. For many years, teachers have been adjusting and monitoring students' work to make sure that it fits the individual student's needs. When teachers continuously monitor students' learning with formative classroom assessments, they are provided with ongoing feedback that is necessary to teachers (Little, 2012). It is important to make sure that they have an understanding of the information necessary for them to learn. Students are expected to know a wide range of vocabulary words in order for them to comprehend stories that they may read or hear. Teachers must use appropriate instructional strategies for students to be successful in the classroom. Teachers need to provide direct explicit instruction as well as the opportunities for students to apply these learning approaches (Haynes, 2008). Constant use of strategies that build on each other should be taught throughout the lesson. The teacher needs to use a variety of questions that promote higher-level thinking. When these strategies are still not successful, other means need to implemented for students. IDEA of 2004 gave schools the ability to use Response to Intervention (RTI) to identify

early reading difficulties (Allen, Ukrainetz, & Carswell, 2012). RTI focuses on identifying decoding and reading difficulties. Early identification of at-risk students helps to eliminate unnecessary special education labels.

History

The No Child Left Behind Act of 2001 (NCLB) is comparable to the Elementary and Secondary Education Act of 1965 in that there was a need to raise overall student achievement and close achievement gaps for some students. It was modeled closely on reforms that many states adopted in the 1990s (Dee & Jacob, 2010). NCLB encouraged reforms in education that include standards-based strategies that set high standards for students while establishing assessable goals to improve individual student achievement. States are required to establish yearly assessments in language and math, and must assess all students at their level of instruction (No Child Left Behind [NCLB], 2001). With NCLB, the federal role increased in education by requiring annual testing, annual educational progress, report cards, highly qualified teachers, and funding changes. States rate schools based on the whole population and subgroups of a statewide test to determine if adequate yearly progress (AYP) is being met, based on the state's proficiency goals. NCLB (2001) stressed the importance of a school's need for reorganization so that its teachers could provide preventative interventions to students who show signs of reading disabilities, and as a result, use more productive approaches that provide many opportunities for these students to achieve the appropriate skills in reading (Justice, 2006). Along with these changes, there was a need to rewrite IDEA, the of Individuals with Disabilities Education Act, which was reauthorized in 2004 (IDEA, 2004).

The 2004 reauthorization of Individuals with Disabilities Education Act (IDEA,

2004) was rewritten with changes that reflect new ideas for students with learning disabilities; one of these ideas that focus on early identification is an approach called Response to Intervention (RTI) (James, 2004). The purpose of RTI is to identify students who need help but who may not be identified as or receive special education services. These students need early interventions to help them overcome learning difficulties, and teachers must use strategies and interventions to help them achieve success. Teachers implement early intervention services that benefit students by identifying reading disabilities early. In order to prepare teachers, IDEA suggested coordinating activities such as professional development that includes training with the use of scientifically-based academic and behavioral interventions, scientifically-based literacy instruction, and instruction for software that may provide aid to students. Once teachers are trained, the schools can begin to implement the early intervention known as RTI. The main purpose of early intervention is to provide additional well-organized instruction, beginning at an earlier age for students who show signs of difficulty when learning to read (James, 2004). Educators develop a plan based on how well a student works in the general education setting, and then they employ scientific research-based instruction to identify specific learning disabilities (SLD) (National Research Center on Learning Disabilities, 2007). The reports of the House and Senate Committees that are associated with the IDEA reauthorization bills contain similar models to identify SLD with the use of intelligence tests, and include scientific research that supports the use of the RTI model. The RTI model can determine which children genuinely have specific learning disabilities from students with learning difficulties that could be solved with more precise, scientifically-based educational interventions. The reauthorized IDEA 2004 examined the need to

reduce the number of students who identified incorrectly. By using the RTI method, it decreases the number of students identified incorrectly by assessing their needs early and using interventions to correct these problems (Samuels, 2011).

RTI - Response to Intervention

Response to Intervention (RTI) is a multi-tiered system for students with difficulties that offers progressively concentrated levels of educational interventions and assessment. Response to Intervention became recognized when the federal government introduced the $1 billion Reading First program, which accompanied No Child Left Behind in 2002. It gave incentives to schools to enhance their literacy programs. For example, the state of Kentucky requested $21,350,126.00 and was appropriated $13,742,471 (U.S. General Accounting Office [GAO], 2002). The 2004 reauthorization of the Individuals with Disabilities Education Act encouraged states to require districts to use RTI as a means to determine if a child has a certain learning disability or difficulty that can be corrected with interventions (Samuels, 2011). An RTI system requires school districts to gather data for multiple purposes. Some required assessments are for initial screenings, diagnostics, formative progress monitoring, benchmark progress monitoring, and summative outcome assessments (Wixson & Valencia, 2011). Using this information, teachers can gather the data for identifying, defining, and determining students' academic difficulties. RTI has redefined the process of identifying and addressing reading disabilities in the public schools.

The assessments usually begin with screenings. Screenings are data gathered before any type of instruction has been taught to the students and are used to determine if further assessments are required. These assessments help educators gain knowledge of

which students may be achieving at, above, or below grade level. Diagnostic assessments, another tool used to identify a student's strengths and weaknesses, help when planning the appropriate interventions needed to increase a student's achievement.

Formative progress monitoring, which may include teacher-made assessments, anecdotal records, and observations, consists of data collected during instruction (Wixson & Valencia, 2011). In contrast, progress monitoring is made up of data collected during certain testing periods throughout the school year. It determines if the instruction the students received is adequate to help them make the progress expected for their grade level. These types of tests may include Dynamic Indicators of Basic Early Literacy Skills (DIBELS), Measure of Academic Progress (MAP), Monitoring Basic Skills Progress, and other various assessments used as indicative progress monitoring tests.

Summative outcome assessments, which consist of data collected at the end of the year, indicate how effective instruction is for students throughout the school year. These data are disaggregated to determine if student achievement goals were met. The basic concept of Response to Intervention (RTI) is the implementation of effective interventions, with a student's response determining if the instruction of the intervention adequately addressed the student's need, and the information gathered from progress monitoring assessments can be used to drive instructional decisions (VanDerHeyden, Witt, & Gilbertson, 2007).

The RTI has three tiers that are used to identify students who are at-risk in language arts and reading. This prevention model has a layered approach and is based on the individuals' needs (Justice, 2006). There are three key principals to the RTI approach. These principles are as follows: a) improve the approaches used to identify

children with reading disabilities; b) exclude the use of IQ tests and discrepancies as means for detecting reading disabilities; and c) encourage the use of early interventions strategies for children that are considered at-risk due to reading disabilities (Fuchs et al., 2003). Tier 1 is the foundation. It involves high-quality reading instruction in the regular education classroom. This includes scientifically-based instructional methodologies, practices, and support. Students placed in Tier 2 receive interventions due to low screening scores or a lack of progress in the regular classroom. The supplemental instruction and interventions at Tier 2 align with the primary instruction. A student placed in Tier 3 receives interventions due to a lack of adequate progress after a reasonable amount of time with the Tier 2 intervention. These students will need more rigorous instructional support. Teachers use the data collected in Tiers 2 and 3 to ensure interventions are used properly so that decisions can be carefully made about the next plan of action to be used with students (Fuchs et al., 2003).

Response to Intervention and Action Research

Since test scores have become so important to schools and school districts, a process that can be used in the classrooms to help strengthen instruction and interventions while implementing RTI is called action research (AR). Action research is a process through which teachers gain an understanding of student learning based on classroom instruction (Little, 2012). Action Research enables teachers to be empowered in the classroom by using data to determine the best approach to develop a plan for implementing RTI in the classroom. This process is on-going because the teacher is constantly observing, analyzing, assessing, and adjusting the instruction until the learning disabilities are addressed. Action Research and Response to Intervention have a common

goal of improving student achievement. The importance of developing a beneficial AR plan must have the necessary components. Little (2012) stated, "The process of continuous problem-solving through AR is necessary to consider, plan, implement, and reflect on student learning as a result of classroom instruction and intervention methods, procedures, and resources" (p.75). The use of Action Research and Response to Intervention go hand-in-hand to improve student achievement. There are many similarities that will benefit the instruction and interventions used with the students. Response to Intervention provides the best frame for action research. Educators gain deeper knowledge of student's ability by understanding how they learn and how they develop comprehension and/or misconceptions (Pelton, 2010). Action Research is valuable for teachers and schools because the use of problem-solving drives implementation of RTI.

There are four steps to correctly implementing Action Research. First, teachers must identify a classroom problem. This allows for the teacher to pinpoint the area of need. Development and implementation of an Action Research plan is the second step. This plan guides the research to improve the use and delivery of strategies. The third step involves teachers and administrators collecting and analyzing data to create an awareness of the problem. The final step in Action Research involves using and sharing data results so that educators can implement the plan in order to improve instruction and correct areas of weakness. For successful implementation of Action Research with Response to Intervention, it is important for schools to employ teachers and educational professionals who have diverse experiences; to develop procedures in place, forms, time frames, and expectations for each tier of RTI; to provide professional development as needed by the

educators; to communicate with stakeholders; and to provide current resources for school-wide interventions (Little, 2012). Developing a successful program will take time for full implementation.

School districts need to train the diverse pool of teachers fully to ensure that their RTI team is well structured and prepared so that it functions properly. Because the RTI model is based upon data-driven instruction, this makes Action Research well suited for the RTI model. Together they offer opportunities for teachers to be reflective and responsive, thus improving student achievement (Pelton, 2010). With the changes in education that occur daily, it is important for educators to be aware of new mandates, procedures, and policies for RTI and AR. Since RTI provides an appropriate framework for Action Research, this assures that the desired goals will be met thereby increasing student achievement (Little, 2012).

Response to Intervention, Special Education, English Language Learners, and Preschool

"Response to intervention started out as a way to identify and teach struggling readers and special education students, but it's fast becoming a way to change schooling for all students" (Samuels, 2011, p. S2). Response to Intervention's framework supports the process of identification of special education students. With the early identification of students with language difficulties, the RTI process helps to determine which students are in need of more specialized help and which students need extra support (Ball & Trammell, 2011). General education teachers are able to administer the interventions and instructions for all students in Tier 1. Tier 2 of RTI is structured to provide more support for students who do not show adequate improvement in reading/language arts skills

through more specialized instruction with the general classroom teacher (Buffum, Mattos, & Weber, 2010). At the Tier 3 level, a more comprehensive evaluation is administered to determine which services will be of greatest benefit to the student. Data collected during this process may be used as one of the factors for determining if a child is eligible for special education services (Bayat, Mindes, & Covitt, 2010).

Not only has RTI been used to aid in special education identification, but it has also been beneficial to the development of appropriate instruction for English Language Learners (ELL) and preschoolers (Samuels, 2011). The potential benefits of the RTI approach can increase accountability for all students, regardless of whether they are regular education students or require special education or ELL services. The RTI approach encourages collaboration will all educators - regular education, special education, ELL education, administrators, and parents (National Joint Committee on Learning Disabilities [NJCLD], 2005).

The RTI model approach shows promise in educating students with learning disabilities because it includes the development of assessments for identification of students with learning disabilities and leads to fewer referrals of students to special education (NJCLD, 2005). The use of RTI helps to develop and improve the student's ability to read before problems become ingrained (Samuels, 2011). The RTI approach has shifted the way students are identified. Instead of waiting for students to qualify, students are now being helped through "early and sustained use of evidence-based practice" (Greenwood, Bradfield, Kaminski, Linas, Carta, & Nylander, 2011, p. 1). Special education teachers realize that RTI cannot be the only indicator of students with disabilities, but the data can be used as an important component of the comprehensive

evaluation that will be conducted when a student does not make progress at certain Tiers.

To ensure that the RTI approach is used to its fullest potential, school districts must make decisions for implementation. NJCLD (2005) suggests selecting appropriate components: flexibility and rigor, ability to transition between tiers, and intervention reliability. Structure and component selection are determined by a district's decision of how RTI will be delivered in the classroom (NJCLD, 2005). While there is a basic framework for the RTI model, there are variations that can be used within this framework, such as a single tier or multiple tiers. The district's perception of students' needs determines how they will choose to deliver the RTI approach in the classroom (Brozo, 2010).

There are four major considerations that a district needs to take into account when deciding the components for the RTI model they wish to implement. After considering the needs of students, a district then must strike a balance between rigor and flexibility. By incorporating guidelines that establish the teachers' ability to decide when adequate progress is being made, a more consistent and successful program will emerge. The third consideration districts must decide involves movement within and between tiers. Perhaps the most important factor districts must take into consideration lies with intervention fidelity and other instructional issues. It is a challenge for school districts to ensure that the research-based interventions that are selected and monitored fit the needs of the students. These interventions, to be effective, must be implemented with fidelity and intensity, frequency, and duration (NJCLD, 2005). Other areas that districts will need to make decisions about include resources, time, documentation, and financial support. With a good foundation, the RTI approach can be successful in the district and for all

students, including both those with and without learning disabilities.

English Language Learners in the classroom are becoming more prevalent; the number of ELL students in the classroom has tripled over the last few years. Schools have gone from one ELL teacher to multiple teachers just to cover the workload (Haynes, 2008). Research shows that RTI is beneficial to ELL students because ELL classroom strategies are comparable to the strategies used in the RTI model (Wallace, 2004). Since research has shown that there are specific gaps in the achievement of ELL students compared to regular education students, it is necessary for the regular or general classroom teacher to use effective research-based strategies with English language learners (Haynes, 2008). Effectively teaching English language learners in a regular classroom includes the use of strategies that help make learning meaningful. This is a specific problem for English language learners who come to school with limited English language background (Wallace, 2004). When ELL students receive interventions and instructions at a level that meets their needs, they can be successful much like special education students (Johnson, Mellard, Fuchs, & McKnight, 2006). The RTI model is beneficial to ELL students because it addresses reading difficulties through researched practices with early intervention. English language learners are taught the language acquisition skills that they lack as a result of the language barrier. English language learners can be immersed in explicit instruction of vocabulary, introduction of essential vocabulary before beginning a new chapter, instruction of building background knowledge, visuals for new words, and oral language promotion through cooperative learning groups using the RTI approach. English language learners need much more exposure to new vocabulary than their native English-speaking classmates (August &

Shanahan, 2006). By analyzing information from data and using common strategies and interventions, educators can target the English language learner's language deficiencies and focus on helping the ELL student improve academic achievement as a result of increased understanding through English acquisition skills strategies.

Preschoolers are another group that can benefit from the RTI approach. However, this approach must be modified to meet the needs of this younger group of students. There are no specific models for preschool RTI; however, many states have made necessary modifications to allow for the implementation of RTI in their program. Preschool RTI, through adaptation, can assist children at risk for academic failure, and provide prevention and early intervention for those children who are at risk for special needs (Bayat, Mindes, & Covitt, 2010). Instruction is focused on social skills and early literacy instruction (McClain, Schmertzing, & Schmertzing, 2012). Behavior problems are one of the first indicators of evidence used in determining whether the teacher can start using the RTI approach with the students. Thus begins the first level of interventions. According to McClain et al., (2012):

> In the Integrated Preschool Model, the first level is preventative and interventions are directed toward improving learning and behavior. Instruction focuses on social skills and early literacy instruction, which are also primary features of the required instruction for preschool students. (p. 35)

These behavior problems become more obvious as the child moves up the grades. With the modified RTI approach, these issues can be resolved before they affect the student's achievement. English language learners, students with disabilities, and academically low students can benefit and become proficient language learners. The use

of RTI contributes to improving literacy rates by providing intervention for all students who experience difficulty with reading (Haagar, Klingner, & Vaughn, 2007). From the progress monitoring with the RTI to the many teaching strategies mentioned, RTI promotes student learning, and provides a clear, positive learning experience for all students. No matter how RTI is used, all students benefit when educators use interventions to help improve student achievement (Johnson et al., 2006).

Principals Support for Response to Intervention

Administrators have the responsibility to ensure that their teachers are serving students to the best of their abilities. It is necessary for principals to support the RTI model to help increase student achievement. With NCLB (2001) and IDEA (2004) being mandated, it is essential for principals to act responsively. Principals must have the flexibility and authority to determine how their teachers and students should be supported. Principals and educators need to develop a plan that supports individualized instruction for students so that they can be successful. There needs to be an understanding that the design is unique to the needs of the school or district (Callender, 2012). They need to create an environment that supports high achievement and success for all students.

Educating and Involving Parents in Response to Intervention

Response to Intervention does not only affect students, but also parents; parents want their children to be successful in school and want the best learning experience for them (Koltz & Canter, 2007). When parents meet with educators and hear terminology such as RTI, interventions, and modifications, it can be frustrating. Parents need to have the opportunity to learn about strategies and interventions used in the classroom,

especially when their child may be identified as having a learning disability. It is important for parents, as well as teachers, to know how to help children who may have learning difficulties. Parents want to be involved and want to know what to do to help their child. It can be very frustrating for parents when their child does not excel in academics or not get along with peers or teachers. Educators are professionally obligated to inform the parents of the RTI approach, as well as to explain the terms and the interventions used with their child (Byrd, 2011). To help parents make informed decisions, The National Joint Committee on Learning Disabilities (2005) encouraged parents, through asking questions, to learn more about the RTI process in their child's school. Koltz and Canter (2007) suggested that parents ask the following:

> Does our school use an RTI process? If not, are there plans to adopt one?
>
> Are there written materials for parents explaining the RTI process? How can parents be involved in the various phases of the RTI process?
>
> What interventions are being used, and are these scientifically-based and supported by research?
>
> What length of time is recommended for an intervention before determining if the student is making adequate progress?
>
> How do school personnel check to be sure that the interventions were carried out as planned?
>
> What techniques are being used to monitor student progress and the effectiveness of the interventions? Does the school provide parents with regular progress monitoring reports?
>
> At what point in the RTI process are parents informed of their due process rights

> under IDEA 2004, including the right to request an evaluation for special education eligibility? (p. 3)

Parents need to be informed so that they may help and become involved in the best educational process for their child. Response to Intervention is relatively new to school districts; therefore educating parents should be an important component in a school's implementation plan. Parent involvement is the first active step to help them become informed. School leaders must encourage parents to be involved since RTI is complicated and can be intimidating. A special educational referral may be an outcome, and with parent involvement, outcomes tend to be positive for the student and the parents (Byrd, 2011). It is very important to keep parents informed of new approaches and procedures; they should be made partners in the RTI process (Klotz & Canter, 2007).

The Next Generation for Response to Intervention

In order that learning disabilities be identified early, educational reforms involving modifications to the RTI approach have been suggested by some. Fuchs et al (2012) suggested a new approach to RTI, called Smart RTI: A Next-Generation Approach to Multilevel Prevention. Fuchs suggested a modest redesign of multilevel prevention systems to make educators more efficient at delivering instruction, using resources and promoting school success through student achievement. They examined three critical components: multi-stage screening, multi-stage assessment, and special education services. Multi-stage screening identified a risk of academic difficulty. Multi-stage assessment determined the level of intensity of instruction. The examination of special education services focused on how they complement general education instruction and contribute to prevention. The focus was academic, not behavior, and it should have

relevance for students with high-incidence and low-incidence disabilities who strive to meet academic goals (Fuchs et al., 2012). To be effective, schools must work on strengthening education for the purpose of meeting individualized student achievement. The purpose of Smart RTI is to make "efficient use of school resources while maximizing students' opportunities for success" (Fuchs et al., 2012, p. 263).

Summary

Educational reform is on everyone's mind. Parents, teachers, and administrators want all students to be successful so that they can compete globally. As discussed, RTI is a research-based approach that provides students with the interventions in small segments to help improve student achievement. According to Van Bramer (2011), "With the 2004 reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA), there is great interest in a resulting education initiative known as response to intervention" (p. 40). The RTI approach provides multiple layers or tiers of intervention to ensure success for all students, beginning in Tier 1 with intense classroom instruction.

The classroom teacher plays a vital role in ensuring that the most effective instructional programs are utilized and delivered to all students. It is important for all students to have the chance to get the best education available. Special education and ELL students need much more exposure to language acquisition, intense instruction and interventions, and many of these students' needs are discovered through the early detection of learning difficulties. It is important to develop their knowledge base in areas where it is deficient. Through constant progress monitoring, data collection, and reflection, educators can provide rich, meaningful lessons that will build the foundation

necessary for students to be successful in the classroom. Interventions and differentiated instruction are very beneficial to all students. Van Bramer (2011) stated:

> RTI helps accomplish this to reach the goal of successful student achievement. In order to differentiate instruction so that all students can succeed, as is the goal of RTI, teachers must understand the role of language and assisted performance in learning. They will then be able to teach systematically and explicitly in a mindful manner that makes sense to each individual learner; hence, initiating accelerated learning for every student. (p. 43)

All teachers want all students to be successful. It is necessary to continue to make improvements in education so that students will be successful in school and in the global world (Ross-Fisher, 2008).

CHAPTER III

Methodology

Overview

The purpose of this chapter is to explain the methods and procedures used to conduct this study. The purpose of this study was to see if schools that implemented Response to Intervention (RTI) increased the language arts achievement scores for students based on gender and ethnicity. This study was conducted in one school system in western Kentucky.

Research Design

The research design employed was a quantitative descriptive field study with the purpose of determining if the use of RTI strategies for at-risk students had an effect on the Measures of Academic Progress (MAP) assessment scores for at-risk students. Archival data was collected and compared using scores from students who participated in the RTI program and those who did not participate in the RTI program. The data gathered included gender, grade level, and ethnicity, and consisted of the fall, winter, and spring test scores. The independent variable was the use of the intervention (RTI). The dependent variable was the outcomes in reading and language arts MAP scores for student in each group. T-tests and ANOVAs were used to determine if differences were present between the two groups.

Participants

Archival MAP assessment scores for English and language arts of 350 students in first through third grades were collected from the testing coordinator in a western Kentucky school district. The information requested included age, gender, and ethnicity,

as well as the data from the three periodic assessments (fall, winter, and spring). Names and student identifications were removed from the data to ensure anonymity of participants. To assure confidentiality, the district's assessment coordinator removed any identifiable information.

Instrument

Measures of Academic Progress (MAPs) standardized test scores from fall, winter, and spring were used. MAP is an assessment used to help the teacher determine a student's true academic and achievement level. It is used as a guide to help teachers plan effective instruction and to prepare students for state assessments. According to North West Evaluation Association (NWEA) (2013),

> By using MAP assessments, teachers know precisely where each student needs additional instruction, and how students may be grouped for a more effective learning dynamic. MAP tests also help educators prepare for the coming year by providing them with reliable information to guide instructional planning. (Press Release)

The MAP assessment tests English, languages arts, math, and science. This is a progressive test that identifies growth from one testing period to the next, and it projects growth to determine where a student should be performing from year to year. The MAP assessment helps to identify concepts the student has mastered and the areas that need to be targeted for academic focus. It also compares progress with other students in the class, grade, or district. Additionally, it tracks academic growth through one school year or several school years, and it determines how to design learning strategies for the student.

The North West Evaluation Association (2004) indicates that the test validity and reliability are stated in terms of a Pearson product-moment correlation coefficient (r). The minimum acceptable correlation is considered to be .80; 1.00 is a perfect correlation. The validity of the test is assured by mapping existing content standards from the district or state. The MAP assessment, while meeting these correlations, is also a good indicator of how well a student will perform on state assessments.

Procedures

For the procedure, a letter was sent to the Christian County Public School System requesting permission to review archival data for students of schools that used the RTI model as well as students of schools that did not use the RTI model. An additional letter was sent to Austin Peay State University Institutional Review Board requesting permission to complete this field study. These letters gave a brief overview of the field study and explained that there were no risks involved.

Once approval was granted from the APSU Institutional Review Board and the director of schools of the Christian County School System, information was gathered from the school district's assessment coordinator. Archival data was reviewed and compared to determine if the scores of students who were considered at-risk and participated in the RTI model improved as well as the same for students who were not considered at-risk and did not participate in the RTI model. Archival assessment score data in the areas of age, gender, and ethnicity were compared to determine if the use of RTI was successful in improving achievement scores. To determine the statistical significance, t-tests and ANOVAs were utilized.

Data Analysis Plan

The data was analyzed using JUMP 10 program. Data was entered and compared in the JUMP 10 program to determine if RTI was beneficial for students who were determined to be at-risk. An unpaired t-test for each of the participating grade levels and MAP in reading and language arts was used to determine the statistical significance. Analysis of the data was used to determine the statistical significance. To indicate whether there was a statistically significant difference between RTI and non-RTI students on the MAP achievement test based on age, gender, and ethnicity, the data was tested at the $p<0.05$ level.

CHAPTER IV

Data Analysis and Results

Introduction

This study examined MAP assessment scores of students who were considered at-risk and entered into the RTI program in one school in Christian County. The purpose of this study was to determine if there was a significant relationship between students who participated in the RTI program and if RTI demonstrated benefits to at-risk students by comparing their achievement scores to see if they improved by the end of the school year. This study used MAP assessment scores that were collected during the fall, winter, and spring assessments during the school year of 2011-2012. This study presents the results of the data analysis while addressing the following research questions:

1. Is there a significant difference in MAP scores for students participating in RTI as compared to those of students not participating in RTI?
2. Is there a significant difference in MAP scores based on gender for students participating in RTI as compared to those of students not participating in RTI?
3. Is there a significant difference in MAP scores based on ethnicity for students participating in RTI as compared to those of students not participating in RTI?

This study examined the MAP assessment scores to determine if the use of the RTI model implemented in the Christian County School System had an impact on at-risk students. This study determined if there was a significant relationship between RTI and increased MAP assessment scores in relation to age, gender and ethnicity. This study used MAP scores for reading and language arts for the fall, winter, and spring testing

periods for grades one through three. Table 1 is an overall summary of the MAP assessment for each grade level testing period during the 2011-2012 school year.

Table 1
Total Students with Valid Growth Test Scores By Grade Level

Grade Report	Fall	Winter	Spring
Grade 1			
Total Students with Valid Growth Test Scores	74	73	71
Standard Deviation	9.2	12.1	14.6
Norm Grade Level Mean RIT	160.3	170.7	176.9
Students At or Above Norm Grade Level Mean RIT	38	24	36
Grade 2			
Total Students with Valid Growth Test Scores	59	59	59
Standard Deviation	16.9	15.9	14.4
Norm Grade Level Mean RIT	175.9	183.6	189.6
Students At or Above Norm Grade Level Mean RIT	26	27	35
Grade 3			
Total Students with Valid Growth Test Scores	75	80	79
Standard Deviation	9.5	14.7	12.5
Norm Grade Level Mean RIT	192.1	194.6	199.2
Students At or Above Norm Grade Level Mean RIT	36	46	43

This summary illustrates how each grade level performed for the year. The Total Students with Valid Growth Test Scores are the number of students who took the test. The Standard Deviation reflects a range of scores and achievement within a group. The Norm Grade Level Mean RIT is the average score for students who were in the same grade and who tested in the same test window as observed in the most recent NWEA (2013) norms study. The Students At or Above Norm Grade Level Mean is the number of students reported who scored at or above the norm grade level mean RIT. According

to the NWEA (2013) Student Progress Report Quick Reference, the RIT is used to measure how "tall" a student is on the curriculum scale, and scores can be compared to tell how much growth a student has made, similar to measuring height on a yardstick. This score is independent of the age or grade of the student but reflects the instructional level at which the student is currently performing, helping teachers plan instruction at an appropriate level for the student.

Data Analysis Procedures

Using Jump 10, a statistical software program, the fall MAP scores of students prior to implementation of RTI were compared to the spring MAP scores to see if growth was achieved. The reading assessment scores were sorted by grade level. Independent factors of gender and ethnicity were also researched. Three different hypotheses were analyzed using descriptive statistics. The relationships of each hypothesis were analyzed using Analysis of Variance (ANOVA). They were compared at $p = \pm .05$ level of significance.

To address the first research question, the archival data was analyzed to determine if there was a significant difference in MAP scores for students participating in RTI as compared to those of students not participating in RTI, and to determine if students placed in RTI met growth expectations set by the MAP assessment. Students who were placed in RTI received supplemental intervention instruction, and students who were not in RTI did not. Students' fall scores for reading were compared to spring scores to determine if growth occurred. Each grade was analyzed separately.

For the second research question, the data was analyzed comparing non-RTI and RTI students' scores to determine if significant growth was achieved, according to

expectations set by the MAP assessment, based on gender. Scores from grades one, two, and three were separated, then divided based on students whose percentile score placed them in the non-RTI and RTI groups. Next, each group was sorted based on gender. Each group's scores were then compared utilizing t-tests to determine if there was a statistical significance in growth for students receiving RTI.

To address the third research question, the data was analyzed comparing the non-RTI and RTI students to determine if significant growth was achieved based on ethnicity. Scores from grades one, two, and three were again separated, then divided based on students whose percentile score placed them in the non-RTI and RTI groups. Next each group was sorted based on ethnicity. Each group's scores were then compared utilizing t-tests to determine if there was a statistical significance in growth for students receiving RTI.

Demographics Characteristics

All students in the Christian County School District are given the MAP assessment three times a year. Once the assessment has been administered in the fall, the school administrator(s), guidance counselor, and academic coach review the findings to determine which students will be placed in RTI. The placement of students is based on their test percentile. Students scoring in the 0-10 percentile range are placed in Tier 2 RTI. In Tier 2 RTI, the student receives supplemental interventions to help increase their understanding and knowledge of the common core standards being taught in the classroom. Students are monitored for progress throughout the year on MAP assessment. By monitoring these students, it shows tangible growth.

Results

Research Question One: Is there a significant difference in MAP scores for students participating in RTI as compared to those of students not participating in RTI? This research question examined the growth of students from the beginning of the year to the end of the year. The MAP assessment projects a growth level for each student beginning with the fall assessment.

Table 2
Evaluating MAP scores of RTI students for Growth for the 2011-2012 school year

	Fall 2011 RIT	Spring 2012 RIT	RIT Growth	Growth Projection
Grade 1				
Student A*	139	157	18	15
Student B	149	155	6	15
Student C	142	144	2	15
Student D	139	149	10	15
Grade 2				
Student E*	150	174	24	19
Student F	152	164	12	15
Grade 3				
Student G*	161	183	22	19
Student H*	167	186	19	13
Student I*	169	199	30	18

*Student met and exceeded their projected grow.

Based on the RIT Score from fall 2011 to spring 2012, all RTI students achieved growth or projected growth on the MAP assessment. Table 2 shows the beginning RIT score, the ending RIT score, the RIT Growth, and the Growth Projection.

The students who participated in the RTI Program showed growth throughout the year. Five of the students met and exceeded their growth projection to show that they made one year's growth. The others who made growth but did not reach their projected growth were close to the projected growth. This table shows that students who tested in the 10% or below percentile were able to grow. The growth may be related to participating in the RTI program. The students who reached their projected growth will not participate in the RTI program the next school year.

Research Question 2: Is there a significant difference in MAP scores based on gender for students participating in RTI as compared to those of students not participating in RTI? This research question examined the variables of non-RTI and RTI students based on gender. T-tests were utilized to compare each grade level's MAP scores from the spring testing period to determine if there was a valid correlation among non-RTI students and RTI students due to gender. Table 3 outlines the comparison of RTI students and non-RTI students based on gender for each respective grade level.

Three of the six ANOVAs utilized to test this hypothesis indicated a statistical difference at the .05 level with relation to gender: first grade males, second grade males, and third grade females. Based on the statistical analysis using ANOVAs comparing end of year MAP scores for gender, the null hypothesis must be rejected for females in first and second grades and males in third grade.

Table 3

Unpaired t-Tests Evaluating MAP scores (RTI/Non RTI) 2011-2012 by ethnicity

Grade Level /Variable	n	M	p
1st RTI Female	2	140.5	**0.00314****
1st Non-RTI Female	26	159.214	
1st RTI Male	1	142	**1.1679**
1st Non RTI Male	41	159.214	
2nd RTI Female	18	180.5	.00014**
2nd Non-RTI Female	4	150.25	

Unpaired t-Tests Evaluating MAP scores (RTI/Non RTI) 2011-2012 by ethnicity

2nd RTI Male	5	159	**1.0783**
2nd Non-RTI Male	33	192.78788	
3rd RTI Female	3	**179**	**2.54638**
3rd Non-RTI Female	42	202.02381	
3rd RTI Male	3	169.33333	**0.01921****
3rd Non-Male	31	201.80645	

Note: **p = < .05

However, the null hypothesis must be accepted when considering the statistical analysis using the ANOVA for males in first and second grades and females in third grade. When analyzing ANOVAs comparing end of year MAP scores for males in first and second grades and females in third grade post and prior to RTI, it was found that although there

was a difference in mean scores and students performed better in RTI, it was not statistically different at the .05 level. The difference revealed a *p* value of 1.1679, 1.0783 and **2.54638** respectively.

Research Question 3: Is there a significant difference in MAP scores based on ethnicity for students participating in RTI as compared to those of students not participating in RTI? Nine t-tests were utilized to compare each grade level's MAP scores from the spring testing period to determine if there was a valid correlation among non-RTI students and RTI students. Table 4 outlines the comparison of RTI students and non-RTI students based on ethnicity for each respective grade level.

Seven of the nine ANOVAs utilized to test this hypothesis indicated a statistical difference at the .05 level with relation to ethnicity: first grade other and third grade African-American students. Based on the statistical analysis using four ANOVAs comparing end of year MAP scores for white, African-American, and other, the null hypothesis must be rejected. However, the null hypothesis must be accepted when considering the statistical analysis using the ANOVA for first grade other and third grade African-American students. When analyzing ANOVAs comparing end of year MAP scores for other and African-American students post and prior to RTI, it was found that although there was a difference in mean scores and students performed better in RTI, it was not statistically different at the .05 level. The difference revealed a *p* value of .128 and 1.243 respectively.

Table 4

Unpaired t-Tests Evaluating MAP scores (RTI/Non RTI) 2011-2012 by ethnicity

Grade Level /Variable	n	M	P
1st RTI White	5	150.2	
1st Non-RTI White	27	184.7037	.0001**
1st RTI African-Am.	3	151.66667	
1st Non-RTI African-Am.	31	175.32258	.001**
1st RTI Other	1	155	
1st Non-RTI Other	4	180.25	.128
2nd RTI White	3	161.3333	
2nd Non-RTI White	25	194.48	.0001**
2nd RTI African-Am.	4	160	
2nd Non-RTI African-Am.	24	191.79167	.001**
2nd RTI Other	0	N/A	
2nd Non-RTI Other	3	199	.0007**
3rd RTI White	5	150.2	
3rd Non-RTI White	27	184.7037	.0001**
3rd RTI African-Am.	5	178	
3rd Non-RTI African-Am.	36	200.4444	1.243

Table 4 continued

Unpaired t-Tests Evaluating MAP scores (RTI/Non RTI) 2011-2012 by ethnicity

3rd RTI Other	9	70.850	
3rd Non-RTI Other	4	200	**0.012****

Note: **p = < .05

CHAPTER V

Summary, Conclusions, Recommendations

Summary

The purpose of this study was to investigate the schools that implemented Response to Intervention (RTI) to determine if it helps at-risk students increase the language arts achievement scores based on the Measure of Academic Progress (MAP) standardized assessment. All students of the Christian County School District were administered the MAP assessment three times during the 2011-2012 school year. The data of non-RTI and RTI students were compared to determine if students participating in the RTI model were successful in reaching their growth goals by the end of the year. This study also assessed any significant difference in MAP scores based on age, gender, and ethnicity.

Improving student achievement through the RTI model can assist the district in making better policy decisions in the future as the district strives to meet the challenges of the requirements of NCLB.

The sample for this study was 216 primary students in first, second, and third grade in a Title I school in the Christian County School District. Participants involved in the study were administered the MAP assessment three times during the 2011-2012 school year. Literacy achievement for grades one through three was examined using the following variables: gender and ethnicity (white, African-American, or other status). The study was conducted to test three hypotheses stated in the null. Unpaired t-tests and Analysis of Variance, (ANOVA) were utilized using Jump 10 statistical software to test for statistical significance at the .05 level.

Conclusions

The main purpose of this study was to determine if students participating in the RTI model had a significant effect on literacy achievement as measured by MAP assessment.

Hypothesis one compared the beginning of the year MAP assessment scores to the end of year MAP assessment scores of students before and after the implementation of the RTI model. This hypothesis was tested for all students in the study sample. First, second, and third grade end of year scores were compared to measure literacy achievement before and after the implementation of the RTI model. Based on the growth achievement, most students participating in the RTI model were successful in obtaining their achievement growth.

Hypothesis two compared the end of year MAP scores of males and females before and after the implementation of RTI. This hypothesis was tested for all students in the study sample. First and second grade end of year scores were compared to measure literacy achievement before and after the implementation of RTI based on gender. Based on the statistical analysis using ANOVAs comparing end of year MAP scores for gender, the null hypothesis must be rejected for females in first and second grades and males in third grade. However, the null hypothesis must be accepted when considering the statistical analysis using the ANOVA for males in first and second grades and females in third grade.

Hypothesis three compared the end of year MAP scores of students before and after the implementation of RTI based on ethnicity (white, African-American, and other). This hypothesis was tested for all students in the study sample. Seven of the nine

ANOVAs utilized to test this hypothesis indicated a statistical difference at the .05 level with relation to ethnicity: first grade other and third grade African-American students. Based on the statistical analysis using four ANOVAs comparing end of year MAP scores for white, African-American, and other, the null hypothesis must be rejected. However, the null hypothesis must be accepted when considering the statistical analysis using the ANOVA for first grade other and third grade African-American students.

Recommendations

Based on the findings of this study, the following recommendations are made:

The analyses of data in this study appear to support the Christian County School District's implementation of the RTI model. Christian County Public Schools should continue implementing the RTI model in the schools.

The data have revealed positive benefits for African-American and male primary students in literacy outcomes after participating in the RTI model. Former research and the findings of this study suggest that all primary students could benefit from participating in the RTI model. Research should be conducted to assess the impact of the RTI model in schools for African-American and male at-risk populations.

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APPENDICES

Appendix A

Christian County Public Schools

Letter of Approval to Conduct Research

November 2, 2012

Anna Goode

You have been approved to do your field study on the effects of RTI on MAP testing. Ms. Mary Ann Gemmill, Superintendent, and Ms. Amy Ramage Wilcox, Chief Instructional Officer, have both given permission.

Tracey Leath

Instructional Supervisor/
District Assessment Coordinator
Christian County Public Schools
200 Glass Avenue
Hopkinsville, KY 42240

Appendix B

Austin Peay State University Institutional Review Board

Letter of Approval to Conduct Research and Modifications

Date: February 19, 2013

RE: Study number _13-009_____

Dear Anna Goode,

Thank you for your recent submission to the IRB. We appreciate your cooperation with the human research review process.

Congratulations! This is to confirm that your proposal has been approved and that your study is exempt from further review by the APIRB. Exemption from further review is granted per federal regulations **45 CFR 46.401(b), category 4:** Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available **or** if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the participants.

You may conduct your study as described in your application, effective immediately. A closed study report to IRB is required by February 19, 2014 or before.

Please note that any changes to the study must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. If you have any questions or require further information, you can contact me by phone (931-221-6106) or email (shepherdo@apsu.edu).

Again, thank you for your cooperation with the APSU IRB and the human research review process. Best wishes for a successful study!

Sincerely,

Omie Shepherd, Chair
Austin Peay Institutional Review Board

Cc: Dr. Tammy Shutt