

PSYCHOMETRIC VALIDATION OF BUY-IN MEASURES
FROM THE PS/RTI EVALUATION TOOL

A Thesis
by
KAYLIE KITTNER

Submitted to the Graduate School
at Appalachian State University
in partial fulfillment of the requirements for the degree
MASTER OF ARTS

May 2016
Department of Psychology

PSYCHOMETRIC VALIDATION OF BUY-IN MEASURES FROM
THE PS/RTI EVALUATION TOOL

A Thesis
by
KAYLIE KITTNER
May 2016

Approved by:

Lindsay Masland, Ph.D.
Chairperson, Thesis Committee

Shawn Bergman, Ph.D.
Member, Thesis Committee

Pam Kidder-Ashley, Ph.D.
Member, Thesis Committee

James C. Denniston, Ph.D.
Chairperson, Department of Psychology

Max C. Poole, Ph.D.
Dean, Cratis Williams Graduate School

Copyright by Kaylie Kittner 2016
All Rights Reserved

Permission is hereby granted to the Appalachian State University Belk Library and to the Department of Psychology to display and provide access to this thesis for appropriate academic and research purposes.

Abstract

PSYCHOMETRIC VALIDATION OF BUY-IN MEASURES FROM THE PS/RTI EVALUATION TOOL

Kaylie Kittner
B.S., Appalachian State University

Chairperson: Dr. Lindsay Masland

Although it is widely accepted that evidence-based problem-solving models such as Multi-tiered Systems of Support (MTSS) are effective frameworks for meeting student and school-wide needs, MTSS has yet to be adopted nationwide. This incomplete implementation might stem from educators not “buying in” to MTSS. This study utilized confirmatory factor analysis to contribute to the validation of one of the few existing buy-in measures, the Florida Problem Solving/Response to Intervention Evaluation Tool (Castillo et al., 2010). The current study examined the validity of the models proposed by Castillo et al. (2010) through a sample of 156 public school educators from a rural school system that has adopted an MTSS framework. The results indicated that the original factor models were a poor fit with the present data. Subsequent exploratory factor analyses indicated the data do not fit well into one to eight factor models, but the best fitting models are discussed. Because of limited extant research regarding buy-in in relation to MTSS implementation, recommendations attempting to clarify the factors that encompass buy-in (i.e., perceived skill at and beliefs related to MTSS) are presented.

Keywords: Problem Solving/Response to Intervention Evaluation Tool, MTSS, buy-in

Acknowledgements

I would like to express my sincerest gratitude to my thesis chair, Dr. Lindsay Masland, for all of her guidance, patience, and motivation. Without her help, this thesis would not have been possible. I would also like to thank the members of my thesis committee, Dr. Shawn Bergman and Dr. Pam Kidder-Ashley, for their support and encouragement.

Table of Contents

Abstract.....	iv
Acknowledgements	v
List of Tables	vii
List of Figures.....	viii
Foreword.....	ix
Introduction and Literature Review.....	2
Method.....	12
Results	16
Discussion.....	18
Limitations.....	23
Conclusions and Future Directions	24
References	25
Appendix	40
Vita	56

List of Tables

Table 1. Factor Loadings of Beliefs Model.....	31
Table 2. Factor Loadings of the Perceptions of RtI Skills Model	32
Table 3. Factor Loadings with Geomin Rotation of Proposed Two-Factor Beliefs Model.....	34
Table 4. Factor Loadings with Geomin Rotation of Proposed Five-Factor Beliefs Model.....	35

List of Figures

Figure 1. Buy-In Model.....	37
Figure 2. Beliefs Survey Factor Correlations	38
Figure 3. Perceptions of RtI Skills Factor Correlations	39

Foreword

This thesis is written in accordance with the style of *the Publication Manual of the American Psychological Association (6th Edition)* as required by the Department of Psychology at Appalachian State University.

Psychometric Validation of Buy-In Measures from the PS/RtI Evaluation Tool

A Thesis
by
KAYLIE KITTNER
Appalachian State University

Psychometric Validation of Buy-In Measures from the PS/RtI Evaluation Tool

School-based problem-solving models such as Multi-tiered Systems of Support (MTSS) are gaining popularity as a means to promote individual and school-wide positive educational outcomes. Although it is widely accepted that these evidence-based models of support benefit students and schools alike (Burns, Appleton, & Stehouwer, 2005; Speece, Case, & Molloy, 2003; Vellutino et al., 1996; VanDerHeyden, 2011), nationwide adoption of such models has yet to occur. One reason MTSS is not employed nationwide may be that educators are not “buying in” to the model. In fact, most researchers suggest obtaining buy-in from at least 80% of a school’s or district’s staff in order to successfully implement a new model (Curtis, Castillo, & Cohen, 2008; DeStefano, Dailey, Berman, & McInerney, 2001). *Buy-in* is defined as the degree to which stakeholders understand, agree with, and believe that they have the skills to adopt new practices. Buy-in can also be conceptualized in terms of its relationship to motivation via the expectancy x value theory. In this theory, beliefs regarding expected self-efficacy for an activity and the extent to which the individual values the activity explain an individual’s choice, persistence, and performance in that particular activity (Atkinson, 1957; Eccles et al., 1983). In other words, educators who express a high degree of self-efficacy in the skills needed to implement MTSS, as well as who see value in MTSS as a problem-solving model, are likely to display high levels of buy-in. Given that buy-in is viewed as both a necessary prerequisite (Curtis et al., 2008; DeStefano et al., 2001) and an effective predictor of successful MTSS implementation (Harlacher & Siler, 2011), accurate measurement of buy-in as a construct is of importance to educators.

To date, few instruments measuring buy-in for MTSS and other educational problem-solving models exist. One such survey capturing the multi-faceted nature of buy-in was

developed as a part of the Florida Statewide Problem Solving and Response to Intervention Project (Castillo et al., 2010). Since its development, many schools, school districts, and researchers have used the Problem Solving/Response to Intervention Evaluation Tool (PS/RtI Evaluation Tool; Castillo et al., 2010), but few studies, beyond the original validation studies, have sought to evaluate the psychometric properties of the PS/RtI Evaluation Tool. In this thesis, an overview of the Problem Solving/Response to Intervention Evaluation Tool (PS/RtI Evaluation Tool; Castillo et al., 2010) is provided, followed by the present study, which aimed to validate this tool for future use.

MTSS Buy-In

MTSS is a multi-tier, data-driven problem-solving framework targeted towards assessing and addressing the needs of all students in a school. In this preventative framework, at-risk students are identified and interventions are implemented *before* failure occurs to reduce the number of inappropriate special education referrals (Fuchs & Fuchs, 2006). In MTSS, universal screenings preemptively take place to classify students into one of three tiers. These tiers differ based on the intensity of the intervention provided and the number of children served in each tier. Approximately 80-85% of students fall within Tier 1, and interventions at this level include effective core classroom instruction for all children, effective classroom management, and school-wide positive behavioral supports (Reschly, 2008). Approximately 10-15% of students fall into a Tier 2 category and may receive more intensive or focused small group or individual interventions. The 5% of students falling into the third tier continue to receive these focused or intensive interventions over a longer period of time (Reschly, 2008). The specific interventions occurring within each tier are designed to promote success and limit academic failure. Key features of problem-solving models like

MTSS require educators to (a) select scientifically-based interventions dependent on the needs of the student, (b) implement interventions with fidelity, (c) monitor the student's progress, and (d) alter the intervention if progress is insufficient (Reschly, 2008). It is necessary for these factors, in addition to buy-in, to be in place in order for problem solving frameworks to be successfully implemented.

Expectancy for Success and Buy-In: Influence of Perceptions of Skill

Having or perceiving to have the necessary skills to implement MTSS may be important in determining buy-in and contributes to intervention use. Researchers studying the impact of perceived skill on behavioral interventions found that teachers thought interventions for students with more severe behavioral problems required more skill (Martens & Meller, 1989). Further, those teachers tended to be reluctant to intervene if they did not perceive themselves as skilled in implementing an intervention for a student with a severe behavioral problem. This finding aligns with an expectancy x value approach to understanding buy-in, and it suggests that perception of skill plays an important role in explaining teacher buy-in to and use of an educational innovation.

Another component of successful program buy-in that is related to skill is professional development. Danielson, Doolittle, and Bradley (2007) argued that professional development is crucial for sustained implementation, although it alone is not sufficient (Fuchs, Fuchs, Harris, & Roberts, 1996; Kratochwill, Volpiansky, Clements, & Ball, 2007). Many educators may not have the background or training in skills needed for MTSS implementation, such as data-driven decision-making or administration of screening assessments. Suggested components of professional development for MTSS include new or supplementary training in the areas of high quality instruction, knowledge of screening

diagnostic and formative assessment practices, and instructional practices informed by data (Harlacher & Siler, 2011). Strong professional development in MTSS is needed for effective implementation and implementation integrity if MTSS is to lead to improved student outcomes (Danielson et al., 2007; Kratochwill et al., 2007). Professional development plays a large role in MTSS implementation and likely contributes to MTSS buy-in, as educators who believe they have received ample training in the skills necessary to implement MTSS are more likely to attempt to implement with fidelity. In contrast, educators who believe that their MTSS-relevant professional development has been inadequate or that their MTSS-relevant skills are insufficiently developed will have a low expectancy for success and are unlikely to embrace an educational innovation such as MTSS.

Values and Buy-in: Influence of Beliefs

An additional component that is likely to explain variability in buy-in to an educational innovation is perceived acceptability of that innovation. Historically, researchers have considered acceptability, in addition to the effectiveness of the intervention, as a key predictor of implementation success for other kinds of interventions. Kazdin (1980, p. 329-330) defined acceptability as the consumer's perception regarding "whether the treatment is appropriate for the problem, whether it is fair, reasonable, or intrusive, and whether it is consistent with conventional notions of what treatment should be." Kazdin (1980) suggested that acceptability is an important consideration for consumers of behavioral research, highlighting the following examples of consumer considerations: (a) when evaluating two equally effective treatments because the two treatments may not be viewed as equally acceptable, (b) when treatments are deemed unacceptable due to potential ethical and legal issues despite the intended effects of the procedure, and (c) when identifying factors that

influence an individual's reaction to a treatment. The concept of acceptability has been applied in terms of teacher judgments of acceptability of behavioral interventions (Martens & Meller, 1989; Martens, Witt, Elliott, & Darveaux, 1985).

Additionally, Witt (1986) posited that many researchers mistakenly assume that teachers are motivated to implement interventions simply because of their effectiveness. He proposed, rather, that there are four factors that influence teacher *resistance*, a concept related to acceptability: (a) *perceived* effectiveness, since teachers may not have time or access to effectiveness research; (b) required time and resources, where a linear relationship exists between the amount of time required and the degree to which a teacher finds an intervention suitable; (c) theoretical orientation of the intervention and how the intervention is described; and (d) the ecological intrusiveness (i.e., the intervention's disruption on the classroom environment). This last factor seems especially influential when classroom interventions are to be implemented, as in an MTSS framework, since teachers must change their own behaviors or classroom ecologies for successful implementation to occur. As such, given the increased ecological intrusiveness of educational innovations such as MTSS, resistance is likely, causing innovation acceptability and buy-in to be compromised.

In addition to acceptability, other terms contributive to understanding beliefs or values regarding educational innovations include social validity and consumer satisfaction, which are closely related and have been used to understand the implementation of school-based practices (Eckert & Hintze, 2000). Social validity is described as a conglomeration of the consumer's perception of the social significance of the goal of the innovation, the appropriateness of the procedures required to implement the innovation, and the satisfaction with the outcome (Wolf, 1978). The importance of social validation in the successful

implementation of behavioral interventions has been widely discussed (Gresham, 2004; Gresham & Lopez, 1996). Recently, the role of social validity in a Positive Behavioral Intervention and Support (PBIS) model was measured, indicating that social validity and faithful PBIS implementation foster each other (Miramontes, Marchant, Heath, & Fischer, 2011). Miramontes et al. (2011) also found that teachers, administrators, and related service providers who work in schools with faithful PBIS implementation perceived that their schools had greater buy-in for PBIS than those who work in schools with less faithful PBIS implementation. PBIS, like MTSS, is an evidence-based, multi-tiered, school-wide problem-solving framework targeting behavior. Because of the relatedness between PBIS and MTSS, where it is commonly understood that the behavioral components of MTSS embody the theoretical components of the PBIS model, these social validation mechanisms may apply to MTSS buy-in.

Others have recommended considering consumer satisfaction when assessing perceptions of educational innovations. Hawkins (1991) argued that what is referred to as “social validity” is misleading since it implies a social or interpersonal validation rather than a consumer-specific validation. Instead, Hawkins proposed that consumer satisfaction more accurately reflects the fact that the consumer’s opinion is what is evaluated in this process, and further suggests measuring habilitative validity, or consumer satisfaction that is predictive of the benefits and costs of the intervention’s goals, outcomes, and procedures.

Interestingly, perceptions of educational innovations (i.e., acceptability, social validity, and consumer satisfaction) have not consistently been found to be predictors of actual innovation use (Mautone et al., 2009; Sterling-Turner & Watson, 2002). For example, when examining the perceived acceptability of curriculum-based measures (CBMs), Allinder

and Oats (1997) found limited yet inconsistent evidence that teachers with low acceptability (which was measured in terms of their understanding of major components of CBM, judgments of effectiveness, time required, and skill or training needed) have lower rates of implementation than teachers with high acceptability. CBMs are brief and easy to administer probes used to measure progress towards end-of-year academic goals. These findings are of import because curriculum-based measures are typically used in the context of an MTSS model as a progress-monitoring tool.

Given the above findings, it is likely that acceptability and the other measures of perceptions of innovation are necessary, but not sufficient, to conceptualize buy-in effectively. Briesch, Chafouleas, Neugebauer, and Riley-Tillman (2013) recommended considering additional factors to predict or explain intervention implementation. Researchers studying factors beyond acceptability found that acceptability beliefs paired with intervention efficacy, time required, physical resources needed, access to assistance, and the nature of the problem were most important in predicting willingness of school psychologists to implement evidence-based interventions (Forman, Fagley, Chu, & Walkup, 2012) and that resources, training, and educator variables were the most severe barriers for teachers implementing behavioral evidence-based interventions (McGoey et al., 2014).

Lastly, an emerging perspective used to conceptualize issues surrounding buy-in comes from the Diffusion of Innovation theory. Diffusion of Innovation theory attempts to explain how ideas gain momentum and move throughout a social system (Rogers, 1962). An underlying assumption of the theory is that the reaction to the innovation depends on the social context. Rogers further posited that there were five factors that influence innovation diffusion: the perceived relative advantage of the innovation over its predecessor; the

compatibility of the innovation with existing values, experiences, and needs; the complexity of the innovation; the trialability, or ease at which the user can test the innovation; and the observability of the results of the innovation. According to the theory, greater advantage, compatibility, trialability, and observability, along with lesser complexity, lead to more diffusion. In past work, Diffusion of Innovation theory has been used to explain research-to-practices gaps in autism intervention (Dingfelder & Mandell, 2010), community mental health intervention (Mendel, Meredith, Schoenbaum, Sherbourne, & Wells, 2008), and knowledge translation in emergency medicine (Graham, Tetroe, & KT Theories Research Group, 2007), as well as to advise program and research development regarding mental health in schools (Atkins, Hoagwood, Kutash, & Seidman, 2010). Although this theory has not yet been used to explain MTSS implementation gaps, the five influential factors may also contribute to understanding why educators are not buying into MTSS.

Each of these conceptualizations previously discussed may not alone reliably predict MTSS or other intervention use. However, perceived skill, professional development, acceptability, social validity, consumer satisfaction, and diffusion of innovation all clearly relate to one another and contribute to the various ways we understand educator buy-in regarding MTSS. Additionally, expectancy x value theory can contribute to the conceptualization of buy-in, because the expectancy of an individual's success (i.e., an individual's self-perceived skill) and the value the individual holds (i.e., belief) should predict the individual's motivation to use or implement an innovation like MTSS. Because buy-in is frequently cited as a necessary factor for successful MTSS implementation (Harlacher & Siler, 2011), it is imperative that buy-in is not only measured, but also measured accurately, when schools or school districts are preparing to implement MTSS.

Development of the PS/RtI Evaluation Tool

Researchers working on the Florida Problem Solving/Response to Intervention (PS/RtI) Project have begun developing their own tools to measure MTSS implementation and fidelity to evaluate the impact of implementation of this educational innovation (Castillo et al., 2010).¹ Collectively, the tools developed through the PS/RtI Project measure educator progress towards developing consensus on MTSS implementation, educator progress towards developing necessary infrastructure to support implementation, and MTSS implementation practices including implementation fidelity. The PS/RtI Evaluation Tool consists of one self-assessment progress-monitoring instrument, four surveys, and four checklists, and it is intended for school-level, district-level, and state-level educational stakeholders as well as universities and other educational agencies or organizations.

Two of the assessments in the PS/RtI Evaluation Tool—the Beliefs Survey and the Perceptions of RtI Skills Survey—are particularly well suited to measure components of the construct of buy-in. The Perceptions of RtI Skills Survey assesses the perceived influence of professional development efforts on data-based decision making skills in academic domains, behavioral domains, data management, and technology use, and the survey assesses educator comfort level to use those skills. In short, the Perceptions of RtI Skills survey can be conceptualized as measuring an individual’s expectancy or self-efficacy for MTSS implementation. This survey contains 20 items, and it was validated on a sample of 2184

¹ The MTSS framework has been referred to with varying terminology in different states over the years, including Response to Intervention, which was the prominent term used in Florida at the time the PS/RtI project was developed. For the purposes of this thesis, PS/RtI and MTSS can be considered synonymous terms.

educators in 2007. Results from the exploratory common factor analysis for the Perceptions of RtI Skills Survey showed that 80% of the variance in respondent ratings is accounted for with three factors: (a) perceptions of RtI skills applied to academic content, $\alpha = .97$, (b) perceptions of RtI skills applied to behavior content, $\alpha = .97$, and (c) perceptions of data manipulation and technology skills, $\alpha = .94$ (Castillo et al., 2010).

The second survey from the PS/RtI Evaluation Tool that addresses the concept of MTSS buy-in is the Beliefs Survey. Based on the notion that teacher beliefs influence practices implemented in the classroom (Fang, 1996), researchers participating in the Florida PS/RtI Project created their survey to measure beliefs regarding assessment practices, core instruction, intervention, and special education eligibility determination (Castillo et al., 2010). In terms of the expectancy x value theory as applied to buy-in, the Beliefs Survey can be conceptualized as assessing an educator's values regarding the implementation of MTSS as a problem-solving model. The survey consists of 27 items, and it was validated on a sample of 2430 educators in 2007. Results from the exploratory common factor analysis for the Beliefs Survey showed that 72% of the variance in respondent ratings is accounted for with three factors: (a) beliefs regarding academic abilities and performance of students with disabilities, $\alpha = .87$, (b) beliefs regarding data-based decision making, $\alpha = .79$, and (c) beliefs regarding functions of core and supplemental instruction, $\alpha = .85$ (Castillo et al., 2010).

Present Study

The present study attempted to further the empirical validation of the PS/RtI Evaluation Tool through the use of the Beliefs Survey and Perceptions of RtI Skills Survey as measure of MTSS buy-in (see Figure 1). The Perceptions of RtI Skills Survey measures *perceived self-efficacy for adoption of new practices* in MTSS implementation by addressing

individual-level skills in (a) assessing and making classroom and student data-based decisions (b) identifying, accessing, and implementing intervention resources, and (c) disseminating, presenting, and facilitating a meeting on the findings. The Beliefs Survey measures *values* regarding MTSS by addressing (a) level of agreement with the legal premises and foundational assumptions for MTSS, (b) agreement with the usefulness of information gained, (c) agreement with the purported implications of information gained in MTSS, and (d) the agreement with the extent to which teacher roles are changed. However, because of limited extant research on tools used to measure MTSS buy-in, as well as the limited research focusing on the psychometric properties of the PS/RtI Evaluation Tool, the present survey as a measure of buy-in must first be validated for use on the current sample via a confirmatory factor analysis. As such, the following research questions are of interest: Do the Perceptions of RtI Skills and the Beliefs Survey maintain the factor structures initially found by Castillo and colleagues (2010) and generalize to the present sample of educators? If not, can a more empirically acceptable factor structure be derived?

Method

Participants

The school system that participated in this study is located in a rural county in Georgia. At the time of data collection, the system was completing its fourth year of MTSS implementation. Data were collected by the school district to evaluate existing MTSS efforts and to fine-tune implementation for the future. The full PS/RtI Evaluation Tool was not administered because the school district was primarily interested in focusing on buy-in to fine-tune their implementation efforts. After collection by the school system, de-identified data were provided to the author.

One hundred and fifty-six participants took part in this study. Of the 156, 113 were general education teachers, 16 were special education teachers, 13 were student support personnel, 8 were school leadership personnel, and 5 specified “other personnel.”

Participants were all employees of a public school system who were either directly or indirectly involved in academic instruction. Job titles of the recruited personnel included teachers (in general and special education), school counselors, school psychologists, school social workers, academic coaches, principals, assistant principals, and a specified “other” category.

Survey

The survey study design included an online assessment measuring personal belief in assumptions pertinent to MTSS and personal skills related to MTSS implementation. The assistant superintendent sent an email to personnel of this school district recruiting their voluntary participation. Participants were provided an introduction statement and asked to verify consent by selecting a “continue” option to proceed to the survey questions. The survey questions were presented over six web pages. The first page asked questions on background information of the participant. Questions regarding belief were presented on one page. Questions on skill were grouped based on content and were presented over four web pages.

The online survey was conducted through the SelectSurvey software system. The survey used in this study was adapted from the Evaluation Tool used in the Florida Statewide Problem Solving & Response to Intervention Project (Castillo et al., 2010). Adaptations were made to remove references to Florida-specific MTSS procedures and to bring the questions more in line with MTSS procedures as implemented in Georgia. The survey in the present

study (see Appendix A) consisted of 56 questions. The first 6 questions covered background information regarding job description and experience, followed by 30 questions on belief in MTSS practices and 53 questions on the participant's perception of his or her own skills for implementing MTSS practices. The questions from the Beliefs Survey assessed level of agreement or disagreement with service delivery models regarding assessment practices, core instruction, intervention, and special education eligibility determination. Five response options were provided on a bipolar scale: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. The questions from the Perceptions of RtI Skills Survey assessed abilities in applying MTSS in an academic and behavioral context, in data management and interpretation, and in technology use. Five response options were provided on a unipolar scale: No Skill, Minimal Skill, Have Skill (but need support), Highly Skilled, and Very Highly Skilled.

As previously described, an expert panel evaluated the Florida PS/RtI Evaluation Tool's content validity, and an exploratory common factor analysis was completed to identify the construct validity of both the Beliefs Survey and the Perceptions of RtI Skills Survey. Results from the exploratory common factor analysis for the Beliefs Survey showed that 72% of the variance in respondent ratings is accounted for with a three-factor model, and results from the exploratory common factor analysis for the Perceptions of RtI Skills Survey showed that 80% of the variance in respondent ratings is accounted for with a three-factor model (Castillo et al., 2010). Internal consistency reliabilities were measured for three content areas in beliefs and three content areas for skills yielding the following estimates respectively: ($\alpha = .87$, $\alpha = .79$, $\alpha = .85$; $\alpha = .97$, $\alpha = .97$, $\alpha = .94$; Castillo et al., 2010).

Procedure

The survey used in the present study has only been validated by its authors (i.e., Castillo et al., 2010) for the purposes of examining MTSS beliefs and perceived skills. In order to demonstrate that the proposed factor structure was appropriate for the current sample and for future use of the survey, confirmatory factor analyses (CFAs) were utilized using Mplus statistical software (Version 7; Muthen & Muthen, 1998-2015), and best practices in CFA were followed (Jackson, Gillaspay, & Purc-Stephenson, 2009). This approach includes selecting clearly defined and justified models to be tested, providing detailed reports of the results, conducting a power analysis to determine the appropriate sample size, and justifying the choice of the sample population. In terms of data preparation, data should be evaluated for normal distribution and the criteria for analyzing missing data should be reported. Best practices in analysis decisions include reporting the type of the input matrix, the model estimation method, and the type of software used. The fit of the model should be evaluated for global fit, standardized residuals, and parameter estimates. Finally, in terms of reporting the findings, parameter estimates, variances of exogenous variables including the standard errors, the variance accounted for in the exogenous variables, and the structure coefficients in the correlated models should all be reported. A statistical power analysis indicated that a sample of at least 70 would be required to detect the variance ($d = .5$, $\alpha = .05$, $\beta = .10$), which has been met with the current sample of 156 participants. Item-level data were treated as interval data. Separate confirmatory factor analyses were conducted for the Beliefs Survey and the Perceptions of RtI Skills Survey in accordance with the factor structures proposed by Castillo et al. (2010).

Suitable model fit criteria were determined by the model Chi-Square value (χ^2), the Comparative Fit Index (CFI), the Tucker-Lewis Fit Index (TLI), the root-mean-square residual (RMSEA), and the standardized root-mean-square residual (SRMR). Values at or above .95 on the CFI and TLI are considered to be indicative of a good model fit (Hu & Bentler, 1999). Hu and Bentler (1999) recommend a RMSEA value of .06, and Steiger (2007) recommends an upper limit of .07 to indicate a good model fit. Well-fitting models are recommended to have a SRMR value of less than .05 (Byrne, 1998; Diamantopoulous & Siguaw, 2000), although Hu and Bentler (1999) have suggested SRMR values of .08 are acceptable. After determining the fit of the previously proposed models on the current sample, exploratory factor analyses (EFAs) were conducted in order to identify the best fitting models for the current data. EFAs were conducted using oblique geomin rotations.

Results

A confirmatory factor analysis using the 30 items adapted from the Beliefs Survey indicated the data from the present sample were a poor fit with the hypothesized three-factor model, $\chi^2(402) = 3657.064, p < .001, CFI = .372, TLI = .321, RMSEA = .250, SRMR = .112$. Many items appeared to share little variance with the latent variables, indicating the latent variables accounted for very little of the variability of the survey items. Factor loadings for the fitting of the Castillo et al. (2010) Beliefs Survey model to the current sample are presented in Table 1. An examination of the modification indices indicated many items cross-loaded on multiple factors. Based on results from the modification indices, three items freeing the largest paths on the factor loadings were removed in order to determine if the model fit improved. A confirmatory factor analysis when using 27 of the 30 items adapted from the Beliefs Survey also indicated the data were a poor fit with the hypothesized three-

factor model, $\chi^2(321) = 3478.950, p < .001, CFI = .374, TLI = .316, RMSEA = .276, SRMR = .104$.

A confirmatory factor analysis using the 53 items adapted from the Perceptions of RtI Skills Survey indicated the data from the present sample were a poor fit with the hypothesized three-factor model $\chi^2(1322) = 5363.359, p < .001, CFI = .579, TLI = .561, RMSEA = .160, SRMR = .097$. In this analysis, more parameters were estimated than participants from the sample size, which has likely affected the fidelity of these findings. Factor loadings for the fitting of the Castillo et al. (2010) Perceptions of RtI Skills Survey to the current sample are presented in Table 2. Several items cross-loaded across factors, based on an analysis of the modification indices. As such, three items freeing the largest paths on the factor loadings were removed in order to determine if the model fit improved. A confirmatory factor analysis when using 50 of the 53 items adapted from the Perceptions of RtI Skills Survey also indicated the data were a poor fit with the hypothesized three-factor model, $\chi^2(1172) = 4937.682, p < .001, CFI = .588, TLI = .569, RMSEA = .164, SRMR = .091$.

Item correlations on the Beliefs Survey ranged from -.09 to 1.00, and item correlations on the Perceptions of RtI Skills Survey ranged from .20 to .97. See Figure 2 for Belief Survey factor correlations and Figure 3 for Perceptions of RtI Skills factor correlations.

Because the proposed factor structure was not confirmed for either survey in the present sample, two exploratory factor analyses (EFAs) with geomin rotation were conducted to allow all items from both surveys to load on models with one to eight factors. An initial exploratory factor analysis of the 30 items on the adapted Beliefs Survey indicated that

because the item correlations were so high, there was not sufficient variability to partition for the analysis to run past two factors when the model parameters were set to run from one to eight. In order to combat this convergence problem and complete the EFA for the Beliefs Survey, response values were multiplied by 10 and recoded into new variables. The analysis again could not yield a model greater than two factors, and the response values were recoded to multiply by 15, which also did not yield an analysis beyond two factors. The results for the two-factor model from the adapted Beliefs Survey indicated the model did not fit the data well, $\chi^2(376) = 4005.601, p < .001, CFI = .300, TLI = .190, RMSEA = .272, SRMR = .098$. Factor loadings of the adapted Beliefs Survey for the two-factor model can be found in Table 3.

Exploratory factor analysis of the 53 items adapted from the Perceptions of RtI Skills Survey indicated that a model meeting the criteria for good fit could not be found for one to eight factors. A five-factor model approached criteria for an acceptable fit based on the SRMR, which approached statistical significance, $\chi^2(1123) = 4045.382, p < .001, CFI = .695, TLI = .626, RMSEA = .148, SRMR = .046$. Factor loadings for the adapted Perceptions of RtI Skills Survey for the five-factor model can be found in Table 4.

Discussion

The purpose of this study aimed to validate two of the few existing measures of MTSS buy-in, the Beliefs Survey and the Perceptions of RtI Skills Survey (Castillo et al., 2010), for future school district use. With this sample of 156 educators from a public school system, we sought to replicate the factor structures demonstrated by Castillo and colleagues (2010) in order to further validate the factor structure and the appropriateness of using this tool in other school districts when they are implementing or preparing to an MTSS

framework. The present findings indicate that the three-factor structure of the Beliefs Survey and the three-factor structure of the Perceptions of RtI Skills survey proposed by Castillo et al. (2010) did not fit the current data well.

Confirmatory factor analysis of the adapted Beliefs Survey indicated several problems with Castillo and colleagues' (2010) proposed three-factor structure. In this sample, one item with two parts (Question 10: The majority of students with academic problems that are receiving Tier 2 interventions should be capable of achieving grade-level benchmarks in the following subjects—(a) Reading (b) Math) was found to nearly perfectly account for the Academic Ability and Performance of Students with Disabilities factor, and one item with two parts (Question 8: Core instruction should be effective enough to result in 80% of the students achieving benchmarks in (a) Reading (b) Math) was found to nearly perfectly account for the Functions of Core and Supplemental Instruction factor. Many items on the Beliefs Survey were found to have large residual variances, indicating that the latent factors account for very little of the variability of these questions. Furthermore, several items were found to cross-load onto two or all three of the factors, based on the pattern of factor loadings and modification indices of this sample. Removing three of the cross-loading items from the analysis was not sufficient to improve the model fit on the Beliefs Survey. Confirmatory factor analysis of the adapted Perceptions of RtI Skills survey also indicated problems such as cross-loading items on all three factors and small item variance, which indicates participants tended to respond to questions in a similar manner. Removing three of the cross-loading items from the analysis based on modification indices did not improve the model fit of the Perceptions of RtI Skills Survey.

Because many item and factor correlations were found to be relatively strong, this sample did not appear to make the distinctions between items and factors in the same way the original survey sample did. Exploratory factor analysis of the adapted Beliefs Survey indicated a two-factor model as a poor fit for the sample psychometrically, but as the next best way to model the data practically. One of the two questions originally comprising the Functions of Core and Supplemental Instruction factor (Castillo et al., 2010) was found to cross-load onto both exploratory factors, and the other question was found to load better on the items originally comprising the Ability and Performance of Students with Disabilities factor. Most other items fell within the grouping of the original proposed factors, Data-Based Decision Making and Academic Ability and Performance of Students with Disabilities, give or take a few items. Because items originally loading on the Functions of Core and Supplemental Instruction factor and the Academic Ability and Performance of Students with Disabilities factor both concern the topics of student grouping (i.e., Tier 1/Core, Tier 2, and students receiving special education services) and subsequent expectations of how students in those groups should perform, these items could be better represented through one such factor tentatively named Academic Grouping and Performance Expectations with the second factor in this model maintaining the name Data-Based Decision Making.

Exploratory factor analysis of the adapted Perceptions of RtI Skills Survey indicated a five-factor model as the best statistical fit. Although the five-factor model had the best empirical fit, it did not make sense theoretically. Upon further investigation of the proposed item loadings, a four-factor model was found to be more suitable based on the item loadings and the interpretation of the latent factors identified. A four-factor model identified that is close to fitting the data well may comprise of the following factors: (a) Perceptions of Skills

Applied to Behavior, (b) Perceptions of Skills Applied to Academics and Data Selection, Interpretation, and Modification, (c) Perceptions of Skills Applied to Calculating and Using Gap Data, and (d) Perceptions of Skills Applied to Constructing Graphs. It should be noted that one item in this analysis asking about a construct specific to behavior was found to better load, slightly, on the academic factor, and numerous items were found to cross load on both the academic and the behavior skill factors. Therefore, additional work may be necessary to clarify these factors. Furthermore, it may be beneficial to evaluate the usefulness of differentiating between academics and behavior on many of the measured perceived skills.

A surprising finding of the EFA is that many items formerly loading onto the Perceptions of Data Manipulation and Technology Use Skills factor (Castillo et al., 2010) were found to share the same latent factor, presently, with many items formerly loading onto the Perceptions of Skills Applied to Academic Content factor. The questions formerly comprising the Perceptions of Data Manipulation and Technology Use Skills factor (e.g., interpreting response based on progress monitoring data, making modifications to intervention plans based on progress monitoring data) do not specifically ask about these skills as applied to academic or behavioral cases. There is no obvious pattern found in the data, but one possible explanation for the pattern of loadings could be that participants were drawing upon past experiences with *academic* cases when answering questions regarding perceived skills in data manipulation and technology use. Incidentally, the district that was the focus of the current study began their implementation of MTSS by focusing primarily on academic problem-solving. Therefore, the participants may have had more experience using academic data than behavioral data at the time of the survey. Many schools or districts limit the focus of their MTSS implementation to a specific area (e.g., academics or behavior,

reading or math) or grade level when beginning to implement MTSS, which is a recommended practice because it helps to prevent schools from making too many changes at one time (Gibbons & Coulter, 2015).

In sum, the CFAs indicated the data are a poor fit with Castillo and colleagues' (2010) factor structure, and the EFAs indicated that, although we can attempt to make sense of the proposed alternative factor structures, the data do not soundly fit these new models either. This indicates that the Florida PS/RtI Evaluation Tool (Castillo et al., 2010) may measure some, but not all, components of buy-in, or that the surveys may not capture the components of buy-in in the right way. Even though the Beliefs Survey and the Perceptions of RtI Skills Survey were found not to be psychometrically valid, the construct they seemingly measure, buy-in, is still a critical component to consider when implementing a MTSS framework and when facing resistance to MTSS implementation.

As previously mentioned, it is recommended that at least 80% staff buy-in be achieved before a school innovation is implemented (Curtis, et al., 2008; DeStefano, et al., 2001). Many previous educational innovations have failed due to poor implementation efforts (Sarason, 1990). In order for MTSS to be implemented with fidelity, Castillo et al. (2010) adopt the notion that implementation must occur through three stages: (a) consensus development, (b) infrastructure building, and (c) implementation as suggested by Batsche, Curtis, Dorman, Castillo, and Porter (2007) as well as Kurns and Tilly (2008). However, evaluating these components independently from one another (e.g., considering agreement of core MTSS components without considering perceived skill or need for additional professional development in specific areas) has not been consistently predictive of successful intervention or MTSS implementation, as previously discussed. Because researchers have

suggested that more than acceptability or more than professional development, for example, are necessary for successful implementation, it is necessary to improve the current measures of consensus development and infrastructure building because of the influence these factors have on buy-in and ultimately on implementation of MTSS.

Limitations

This study presented several limitations. First, the response rate of surveyed participants was limited, with only 60% of the sample population responding. Additionally, due to the ordering of the survey and attrition in the sample, fewer participants completed the Perceptions of RtI Skills Survey than the Beliefs Survey. The sample in the present study is much smaller than the sample size in the original validation. However, given the fact that the surveys are intended for school and school district use, this sample size is still likely representative of the anticipated users of these surveys. Related to these limitations, the sample responding to this survey is likely to feel more strongly about MTSS than the average school personnel in the district, since the sample consists of voluntary respondents.

Also, the school system, rather than outside researchers, collected this data set. Although permission was obtained to use these data, they were collected to inform internal decision-making efforts and not for the purposes of conducting research. As such, some potentially useful information is missing, such as information on actual implementation behaviors; unfortunately, this information cannot be obtained since the survey has already been conducted.

Next, although the statistical power analysis conducted indicated that a sample size of at least 70 participants would be sufficient to detect variance, the power analysis formula does not actually take variance into account when calculating the necessary sample size.

Even though the number of participants in this study exceeded the power analysis criterion, the item-level data had less variability than expected, thus making it difficult to determine the factor structure from this sample.

Finally, as MTSS implementation is still relatively new in some areas, MTSS may look different at each school or school district nationwide. This could limit the generalizability of the findings from this study, since MTSS implementation may come more naturally to some schools than others, depending on factors such as school climate or resources available, which were not measured during this data collection. Such factors could impact the perceptions of school personnel.

Conclusions and Future Directions

Since the Florida PS/RtI Evaluation Tool was published, citation searches indicate that numerous manuscripts have referenced the original measure, but few have examined the psychometric properties of the instrument. Given that the original factor structure did not replicate in the present sample and that subsequent exploratory models did not indicate a suitable model fit, it is concerning that school districts could make high-stakes decisions regarding teacher and educator professional development and MTSS buy-in using this tool. Despite such concerns, taking a multifaceted approach to measure buy-in continues to be an important task. For future use of this survey, it could be beneficial to consider school or district needs in an item-by-item fashion, but calculating domain (i.e., factor) scores as the manual recommends would be ill-advised, because the present findings do not support using the data in that way.

References

- Allinder, R. M., & Oats, R. G. (1997). Effects of acceptability on teachers' implementation of curriculum-based measurement and student achievement in mathematics computation. *Remedial and Special Education, 18*, 113-120.
doi:10.1177/074193259701800205
- Atkins, M. S., Hoagwood, K. E., Kutash, K., & Seidman, E. (2010). Toward the integration of education and mental health in schools. *Administration and Policy in Mental Health and Mental Health Services Research, 37*, 40-47. doi: 10.1007/s10488-010-0299-7
- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review, 64*, 359-372.
- Batsche, G.M., Curtis, M.J., Dorman, C., Castillo, J.M., & Porter, L.J. (2007). The Florida problem-solving/ response to intervention model: Implementing a statewide initiative. In S.R. Jimerson, M.K. Burns, & A.M. VanDerHeyden (Eds.), *Handbook of Response to Intervention The Science and Practice of Assessment and Intervention* (pp.378-395). New York, NY: Springer.
- Briesch, A. M., Chafouleas, S. M., Neugebauer, S., & Riley-Tillman, T. (2013). Assessing influences on intervention implementation: Revision of the Usage Rating Profile-Intervention. *Journal of School Psychology, 51*, 81-96.
doi:10.1016/j.jsp.2012.08.006
- Burns, M. K., Appleton, J. J., & Stehouwer, J. D. (2005). Meta-analytic review of responsiveness-to-intervention research: Examining field-based and research-implemented models. *Journal of Psychoeducational Assessment, 23*, 381-394.

- Byrne, B. M. (1998). *Structural Equation Modeling: Basic Concepts, Application, and Programming*. Lawrence Erlbaum Associated. *Inc., Mahwah, NJ*.
- Castillo, J. M., Batsche, G. M., Curtis, M. J., Stockslager, K., March, A., & Minch, D. (2010). *Problem solving/response to intervention evaluation tool technical assistance manual*. Tampa, FL: Florida Department of Education and University of South Florida. Retrieved from http://floridarti.usf.edu/resources/program_evaluation/ta_man-ual/index.html
- Curtis, M. J., Castillo, J. M., & Cohen, R. M. (2008). Best practices in system-level change. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology V* (pp. 887-901). Bethesda, MD: National Association of School Psychologists.
- Danielson, L., Doolittle, J., & Bradley, R. (2007). Professional development, capacity building, and research needs: Critical issues for response to intervention implementation. *School Psychology Review, 36*, 632-637.
- DeStefano, L., Dailey, D., Berman, K., & McInerney, M. (2001). Synthesis of discussions about scaling up effective practices. In *Contract No. HS97017002*). *OSEP Work Group: Meeting summary and policy recommendations*.
- Dingfelder, H. E., & Mandell, D. S. (2010). Bridging the research-to-practice gap in autism intervention: An application of diffusion of innovation theory. *Journal Of Autism And Developmental Disorders, 41*, 597-609. doi:10.1007/s10803-010-1081-0
- Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spense (Ed.), *Achievement and achievement motivation* (pp.75-146). San Francisco, CA: W.H. Freeman.

- Eckert, T. L., & Hintze, J. M. (2000). Behavioral conceptions and applications of acceptability: Issues related to service delivery and research methodology. *School Psychology Quarterly, 15*, 123-148. doi:10.1037/h0088782
- Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Research, 38*, 47-65.
- Forman, S. G., Fagley, N. S., Chu, B. C., & Walkup, J. T. (2012). Factors influencing school psychologists' "Willingness to Implement" evidence-based interventions. *School Mental Health, 4*, 207-218.
- Fuchs, D. & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it?. *Reading Research Quarterly, 41*, 93-99. doi: 10.1598/RRQ.41.1.4
- Fuchs, D., Fuchs, L. S., Harris, A. H., & Roberts, P. H. (1996). Bridging the research-to-practice gap with mainstream assistance teams: A cautionary tale. *School Psychology Quarterly, 11*, 244-266. doi: 10.1037/h0088932
- Gibbons, K., Coulter, W. A. (2015). Making response to intervention stick: Sustaining implementation past your retirement. In S. Jimerson, M. Burns, & A. VanDerHeyden (Eds.), *Handbook of response to intervention* (pp. 641-660). doi: 10.1007/978-1-4899-7568-3
- Graham, I. D., Tetroe, J., & KT Theories Research Group (2007). Some theoretical underpinnings of knowledge translation. *Academic Emergency Medicine, 14*, 936-941. doi: 10.1197/j.aem.2007.07.004
- Gresham, F. M. (2004). Current Status and Future Directions of School-Based Behavioral Interventions. *School Psychology Review, 33*, 326-343.

- Gresham, F. M. & Lopez, M. F. (1996). Social validation: A unifying concept for school-based consultation research and practice. *School Psychology Quarterly, 11*, 204-227.
- Harlacher, J. E., & Siler, C. E. (2011). Factors Related to Successful RTI Implementation. *Communiqué, 39*, 20-22.
- Hawkins, R. P. (1991). Is social validity what we are interested in? Argument for a functional approach. *Journal of Applied Behavior Analysis, 24*, 205-213.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 1-55.
- Jackson, D. L., Gillaspay, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods, 14*, 6-23. doi: 10.1037/a0014694
- Kazdin, A. E. (1980). Acceptability of time out from reinforcement procedures for disruptive child behavior. *Behavior Therapy, 11*, 329-344. doi: 10.1016/S0005-7894(80)80050-5
- Kratochwill, T. R., Volpiansky, P., Clements, M., & Ball, C. (2007). Professional development in implementing and sustaining multitier prevention models: Implications for response to intervention. *School Psychology Review, 36*, 618-631.
- Kurns, S. & Tilly, W.D. (2008) *Response to Intervention blueprints for implementation: School-level edition*. Alexandria, VA: National Association of State Directors of Special Education.
- Martens, B. K., & Meller, P. J. (1989). Influence of child and classroom characteristics on acceptability of interventions. *Journal of School Psychology, 27*, 237-245.

- Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*, 191-198. doi: 10.1037/0735-7028.16.2.191
- Mautone, J. A., DuPaul, G. J., Jitendra, A. K., Tresco, K. E., Vile Junod, R., & Volpe, R. J. (2009). The relationship between treatment integrity and acceptability of reading interventions for children with attention-deficit/hyperactivity disorder. *Psychology In The Schools, 46*, 919-931. doi:10.1002/pits.20434
- McGoey, K. E., Rispoli, K. M., Venesky, L. G., Schaffner, K. F., McGuirk, L., & Marshall, S. (2014). A preliminary investigation into teacher perceptions of the barriers to behavior intervention implementation. *Journal Of Applied School Psychology, 30*, 375-390. doi:10.1080/15377903.2014.950441
- Mendel, P., Meredith, L. S., Schoenbaum, M., Sherbourne, C. D., & Wells, K. B. (2008). Interventions in organizational and community context: A framework for building evidence on dissemination and implementation in health services research. *Administration and Policy in Mental Health and Mental Health Services Research, 35*, 21-37. doi: 10.1007/s10488-007-0144-9
- Miramontes, N. Y., Marchant, M., Heath, M., & Fischer, L. (2011). Social validity of a positive behavior interventions and support model. *Education & Treatment Of Children, 34*, 445-468. doi:10.1353/etc.2011.0032
- Muthén, L.K. and Muthén, B.O. (1998-2015). *Mplus User's Guide* (7th ed.). Los Angeles, CA: Muthén & Muthén
- Reschly, D. J. (2008). School psychology paradigm shift and beyond. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology v* (pp. 3-15). Bethesda, MD:

National Association of School Psychologists.

Rogers, E. M. (1962). *Diffusion of Innovation*. New York: Free Press.

Sarason, S. B. (1990). *The predictable failure of educational reform: Can we change course before it's too late?*. San Francisco: Jossey-Bass.

Speece, D. L., Case, L. P., & Molloy, D. E. (2003). Responsiveness to general education instruction as the first gate to learning disabilities identification. *Learning Disabilities Research and Practice, 18*, 147-156. doi: 10.1111/1540-5826.00071

Sterling-Turner, H. E., & Watson, T. S. (2002). An analog investigation of the relationship between treatment acceptability and treatment integrity. *Journal of Behavioral Education, 11*, 39–50. doi: 10.1023/A:1014333305011

VanDerHeyden, A. M. (2011). Technical adequacy of response to intervention decisions. *Exceptional Children, 77*, 335-350.

Vellutino, F., Scanlon, D., Sipay, E., Small, S., Pratt, A., Chen, R., & Denckla, M. (1996). Cognitive profiles of difficult-to-remediate and readily remediated poor readers: Early intervention as a vehicle for distinguishing between cognitive and experiential deficits as basic causes of specific reading disability. *Journal of Educational Psychology, 88*, 601-638. doi: 10.1037/0022-0663.88.4.601

Witt, J. C. (1986). Teachers' resistance to the use of school-based interventions. *Journal of School Psychology, 24*, 37-44. doi:10.1016/0022-4405(86)90040-3

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavioral analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-214.

Tables and Figures

Table 1

Factor Loadings of Beliefs Model

Item	Castillo et al. (2010) Model	Study Model
<i>Academic Ability and Performance of Students with Disabilities</i>		
7	-	.23 (.95)
10a	.81	.99 (.00)
10b	.82	.99 (.01)
11a	.86	.66 (.56)
11b	.85	.65 (.58)
12a	.54	.46 (.79)
12b	.58	.46 (.79)
21	-	.04 (.99)
30	-	.28 (.92)
<i>Data-Based Decision Making</i>		
13	.50	.49 (.76)
14	.47	.32 (.90)
15	.63	.34 (.89)
16	.59	.59 (.65)
17	.47	.29 (.92)
18	.46	.29 (.92)
19	-	.24 (.94)
20	-	.74 (.45)
22	.37	.64 (.59)
23	.41	.48 (.77)
24	-	.67 (.57)
25	-	.68 (.54)
26	-	.69 (.51)
27	.44	.72 (.48)
28	.45	.47 (.78)
29	.41	.33 (.89)
31	.43	.43 (.82)
<i>Functions of Core and Supplemental Instruction</i>		
8a	.72	.99 (.01)
8b	.73	.99 (.02)
9a	.81	.67 (.55)
9b	.80	.67 (.55)

Note. Residual variance is indicated in parentheses.

Table 2

Factor Loadings of the Perceptions of RtI Skills Model

Item	Castillo et al. (2010) Model	Study Model
<i>Perceptions of RtI Skills Applied to Academic Content</i>		
32a	.68	.81
33a	.81	.82
34a	.60	.76
35a	.90	.84
36a	.90	.77
37a	.85	.87
38a	.64	.77
39a	.63	.78
40a	.65	.79
41a	.61	.84
42a	.68	.86
43a	.64	.75
43c	.59	.70
43e	.60	.78
44a	.72	.83
45a	.70	.89
46a	.67	.88
47a	.65	.86
48a	.81	.85
51	.54	.83
52	.43	.80
53a	.69/.62	.77
<i>Perceptions of RtI Skills Applied to Behavior Content</i>		
32b	.65	.76
33b	.65	.79
34b	.67	.72
35b	.79	.79
36b	.76	.74
37b	.74	.86
38b	.69	.75
39b	.70	.76
40b	.72	.80
41b	.75	.86
42b	.83	.84
43b	.78	.77
43d	.78	.76
43f	.78	.70
44b	.77	.83
45b	.76	.90
46b	.82	.88

47b	.78	.85
48b	.74	.84
53b	-	.71
<i>Perceptions of Data Manipulation and Technology Use Skills</i>		
49a	.82	.96
49b	.84	.96
49c	.85	.93
49d	.86	.81
49e	.88	.80
50	.44	.75
54	.46	.57
55a	.33	.60
55b	.57	.64
55c	.70	.64
56	.35	.64

Note. Castillo and colleagues' Perceptions of Rtl Skills survey included two items measuring perceived skill to collect academic progress monitoring data, whereas the present study model included one item. As such, factor loadings from both items on Castillo and colleagues' survey are reported with Question 53a.

Table 3

Factor Loadings With Geomin Rotation of Proposed Two-Factor Beliefs Model

Item	Factor 1	Factor 2
7.	.07	.39
8a.	.43	.41
8b.	.41	.45
9a.	.46	.25
9b.	.44	.28
10a.	1.01	-.03
10b.	.99	-.00
11a.	.60	.15
11b.	.57	.17
12a.	.37	.27
12b.	.37	.27
13.	.03	.46
14.	-.02	.31
15.	-.03	.34
16.	.15	.48
17.	-.02	.25
18.	-.03	.27
19.	.02	.27
20.	-.03	.75
21.	.06	-.03
22.	-.00	.65
23.	.03	.44
24.	-.05	.66
25.	.02	.66
26.	-.06	.71
27.	.02	.70
28.	.19	.37
29.	.21	.22
30.	.16	.34
31.	-.03	.43

Table 4

Factor Loadings With Geomin Rotation of Proposed Five- Factor Beliefs Model

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
32a.	.02	.59	.28	.16	-.10
32b.	.48	.12	.27	.15	.09
33a.	.02	.69	.18	.08	-.16
33b.	.51	.27	.25	-.09	-.01
34a.	.37	.39	.03	.10	-.26
34b.	.74	.03	-.01	.05	-.26
35a.	.25	.52	.12	.11	-.28
35b.	.81	-.06	.12	.08	-.21
36a.	.32	.48	.01	.05	-.30
36b.	.81	.03	.07	-.07	-.33
37a.	.26	.53	.20	.09	-.17
37b.	.70	.12	.22	.04	-.15
38a.	.09	.46	.61	.01	-.06
38b.	.62	-.07	.62	.01	-.02
39a.	.12	.50	.58	-.05	.03
39b.	.47	.17	.55	-.09	.05
40a.	.33	.45	-.02	.11	.06
40b.	.56	.28	-.08	.07	.06
41a.	.20	.68	-.05	.02	.03
41b.	.59	.34	-.06	-.01	.12
42a.	-.03	.89	.07	-.04	.09
42b.	.56	.30	.01	-.01	.19
43a.	.09	.62	.05	.03	.27
43b.	.69	.03	.03	.09	.56
43c.	.19	.58	.01	-.06	.27
43d.	.65	.09	.02	.02	.55
43e.	.13	.61	-.02	.09	.33
43f.	.75	-.09	.05	.01	.50
44a.	.22	.78	-.09	-.15	.08
44b.	.64	.41	-.17	-.14	.03
45a.	.07	.95	-.07	-.10	-.02
45b.	.45	.57	-.12	.00	.05
46a.	.02	.99	-.07	-.13	-.07
46b.	.53	.49	-.15	-.03	-.03
47a.	.02	.93	-.07	-.07	-.04
47b.	.49	.40	-.06	.05	-.03
48a.	-.05	.89	.10	-.02	-.09
48b.	.42	.43	.06	.04	-.07
49a.	.03	.12	-.11	.93	-.04
49b.	-.03	.25	-.13	.87	-.07
49c.	.12	.05	.00	.83	.07
49d.	.03	.05	.15	.69	.23

49e.	.14	-.05	.09	.71	.09
50.	.11	.54	.03	.27	-.08
51.	-.01	.80	.03	.06	-.00
52.	.18	.61	-.09	.13	-.05
53a.	-.12	.78	.14	.11	.02
53b.	.42	.20	.11	.12	.03
54.	-.09	.55	.32	.08	.04
55a.	-.03	.50	.17	.17	.16
55b.	-.14	.66	.07	.17	.18
55c.	-.16	.75	.24	.07	.14
56.	.14	.34	.15	.25	.06

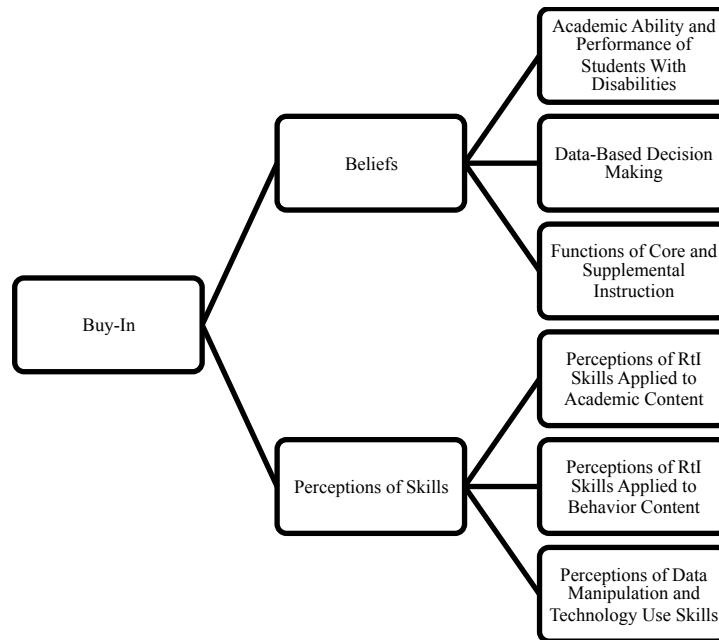


Figure 1. Buy-In Model. This model is based on Castillo and colleagues' (2010) proposed factor structure.

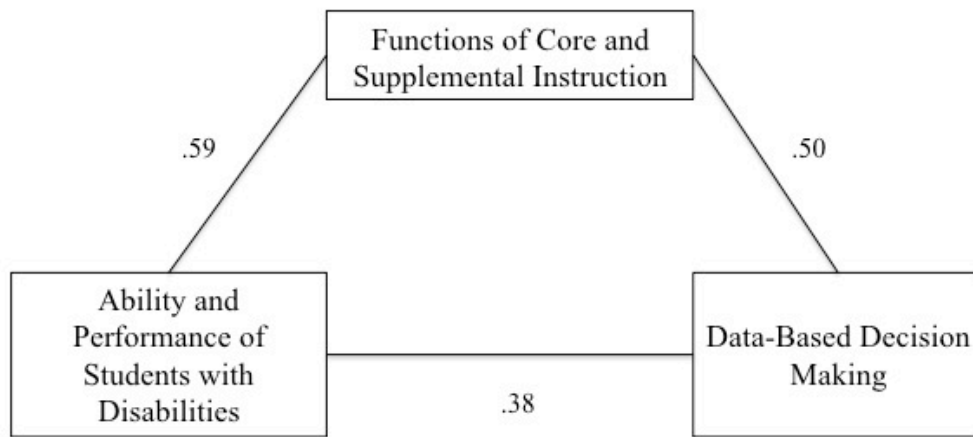


Figure 2. Beliefs Survey Factor Correlations.

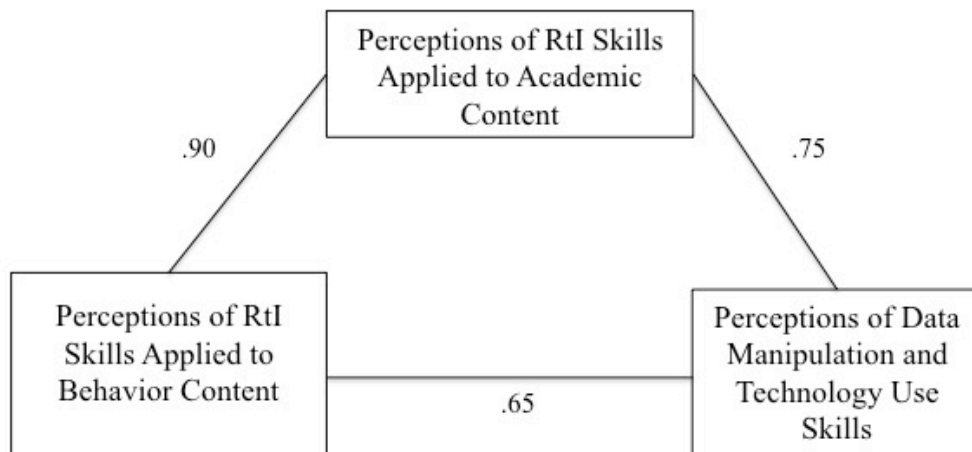


Figure 3. Perceptions of RtI Skills Factor Correlations.

Appendix

FCS Surveys Revised

For items 1-4 below, please select the option that best represents your answer.

1. Job Description:

- Academic Coach
- Teacher-General Education
- Teacher-Special Education
- School Counselor
- School Psychologist
- School Social Worker
- Principal
- Assistant Principal
- Other, please specify _____

2. Grades that you teach (please check all that are appropriate):

- Kindergarten
- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th
- Other, please specify _____

3. School at which you primarily teach:

- Carnesville Elementary School
- Central Franklin Elementary School
- Lavonia Elementary School
- Franklin County Middle School
- Franklin County High School
- Other, please specify _____

4. Years of experience in education:

- Less than 1 year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25 or more years
- Not applicable

5. Number of years in your current position:

- Less than 1 year
 - 1-4 years
 - 5-9 years
 - 10-14 years
 - 15-19 years
 - 20 or more years
6. Highest degree earned:
- B.A./B.S.
 - M.A./M.S.
 - Ed.S.
 - Ph.D./Ed.D.
 - Other, please specify _____

Directions: Using the scale below each question, please indicate your level of agreement or disagreement with the following statements by selecting the option that best represents your response.

7. I believe in the philosophy of No Child Left Behind (NCLB) even if I disagree with some of the requirements:
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
8. Core instruction should be effective enough to result in 80% of the students achieving benchmarks in
- a. Reading
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
 - b. Math
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
9. The primary function of supplemental instruction (i.e. Tier 2 or special education services) is to ensure that students meet grade-level benchmarks in
- a. Reading
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
 - c. Math

- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
10. The majority of students with academic problems that are receiving Tier 2 interventions should be capable of achieving grade-level benchmarks in the following subjects:
- a. Reading
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
 - d. Math
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
11. The majority of students with behavioral problems that are receiving Tier 2 interventions should be capable of achieving grade-level benchmarks in:
- a. Reading
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
 - e. Math
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
12. Students with who are receiving special education services should be capable of achieving grade-level benchmarks (i.e., general education standards) in
- a. Reading
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
 - f. Math
 - Strongly Disagree
 - Disagree
 - Neutral

- Agree
 - Strongly Agree
- 13. General education classroom teachers should implement more differentiated and flexible instructional practices to address the needs of a more diverse student body.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- 14. General education classroom teachers would be able to implement more differentiated and flexible interventions if they had additional staff support.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- 15. The use of additional interventions in the general education classroom would result in success for more students.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- 16. Prevention activities and early intervention strategies in schools would result in fewer referrals to problem-solving teams and placement in special education.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- 17. The “severity” of a student’s academic problem is determined not by how far behind the student is in terms of his/her academic performance but how quickly the student responds to intervention.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- 18. The “severity” of a student’s behavioral problem is determined not by how inappropriate a student is in terms of his/her behavioral performance but by how quickly the student responds to intervention.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree

19. The best way to identify effective interventions for students with learning and behavior problems is to use data collected from psychoeducational evaluations (e.g., IQ and achievement tests).
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
20. The best way to identify effective interventions for students with learning and behavioral problems is to use data collected from benchmarking and progress monitoring.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
21. Many students currently identified as “LD” do not have an actual disability. Rather, their academic problems stem from environmental factors, such as coming to school “not ready” to learn or falling too far behind academically to close the gap sufficiently.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
22. Using benchmarking and progress monitoring data to determine intervention effectiveness is more accurate than using only “teacher judgment”
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
23. Evaluating a student’s response to interventions is a more effective way of determining what a student is capable of achieving than using scores from psychoeducational evaluations.
 - Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
24. Students who are not reaching benchmarks (i.e., general education standards) should have sufficient time to respond to interventions before a psychoeducational evaluation is conducted.
 - Strongly Disagree
 - Disagree
 - Neutral

- Agree
 - Strongly Agree
25. The decision to conduct a psychoeducational evaluation should be based upon progress monitoring data.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
26. Progress monitoring data should be collected for at least one month before making a decision to conduct a psychoeducational evaluation.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
27. Graphing student data makes it easier for one to make decisions about student performance and needed interventions
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
28. A student's parents (guardian) should be involved in the problem-solving process as soon as a teacher has a concern about the student.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
29. Students respond better to interventions when their parent (guardian) is involved in the development and implementation of those interventions.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
30. All students can achieve grade-level benchmarks if they have sufficient support.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
31. The goal of assessment is to generate and measure effectiveness of instruction/intervention.
- Strongly Disagree

- Disagree
- Neutral
- Agree
- Strongly Agree

Perceptions of RtI Skills Survey

Directions: Please read each statement about a skill related to assessment, instruction, and/or intervention below, and then evaluate YOUR skill level within each context of working at a school/building level. Where indicated rate your skill separately for academics (i.e., reading and math) and behavior. Please use the following response scale: NS- I do not have this skill at all MnS-I have minimal skills in this area; need substantial support to use it SS- I have this skill but still need support to use it HS- I can use this skill with little support VHS- I am highly skilled in this area and could teach others this skill

32. The skill to:

Assess the data necessary to determine the percent of students in core instruction who are achieving benchmarks (district grade-level standards).

- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
- g. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)

33. The skill to:

Use data *to make decisions* about individuals and groups of students for the:

- a. Core academic curriculum
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
- h. Core/Building discipline plan
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)

These questions concern YOUR skill level to perform the following steps when identifying the problem for a student for whom concerns have been raised:

34. The skill to:
Define the referral concern in terms of a replacement behavior (i.e., what the student should be able to do) instead of a referral *problem* for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - i. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
35. The skill to:
Use data to define the current level of performance of the target student for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - j. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
36. The skill to:
Determine the desired level of performance (i.e., benchmark) for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - k. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
37. The skill to:
Determine the current level of peer performance for the same skill as the target student for:

- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - l. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
38. The skill to:
Calculate the gap between student current performance and the benchmark (district grade level standard) for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - m. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
39. The skill to:
Use gap data to determine whether core instruction should be adjusted or whether supplemental instruction should be directed to the target student for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - n. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
40. The skill to:
Develop potential reasons (hypotheses) that a student or group of students is/are not achieving desired levels of performance (i.e., benchmarks) for:
- a. Academics

- NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - o. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
41. The skill to:
Identify the most appropriate type(s) of data to use for determining reasons (hypotheses) that are likely to be contributing to the problem for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - p. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
42. The skill to:
Identify the appropriate supplemental interventions available in my building for a student identified as at-risk for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - q. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
43. The skill to:
Access resources (e.g., internet sources, professional literature) to develop evidence-based intervention for:
- a. Academic core curricula
 - NS (No Skill)

- MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - r. Behavioral core curricula
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - s. Academic supplemental curricula
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - t. Behavioral supplemental curricula
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - e. Academic individualized intervention plans
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - f. Behavioral individualized intervention plans
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
44. The skill to:
- Ensure that any supplemental and/or intensive interventions are integrated with core instruction in the general education classroom:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - u. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)

- SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
45. The skill to:
Ensure that the proposed intervention plan is supported by the data that were collected for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - v. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
46. The skill to:
Provide the support necessary to ensure that the intervention is implemented appropriately for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - w. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
47. The skill to:
Determine if an intervention was implemented as it was intended for:
- a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - x. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)

- VHS (Very Highly Skilled)
- 48. The skill to:
Select appropriate data (e.g., Aimsweb, DIBELS, STAR, behavioral observations) to use for progress monitoring of student performance during interventions:
 - a. Academics
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - y. Behavior
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
- 49. The skill to:
Construct graphs for large group, small group, and individual students:
 - a. Graph target student data
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - z. Graph benchmark data
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - aa. Graph peer data
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - bb. Draw an aimline
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - e. Draw a trendline
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)

- HS (Highly Skilled)
 - VHS (Very Highly Skilled)
50. The skill to:
Interpret graphed progress monitoring data to make decisions about the degree to which a student is responding to intervention (e.g., positive, questionable or poor response).
- NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
51. The skill to:
Make modifications to intervention plans based on student response to intervention.
- NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
52. The skill to:
Use appropriate data to differentiate between students who have not learned skills (e.g., did not have adequate exposure to effective instruction, not ready, got to behind) from those who have barriers to learning due to a disability.
- NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
53. The skill to:
Collect the following types of data:
- a. Academic progress monitoring (e.g., Aimsweb, DIBELS, STAR, Easy CBM)
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
 - cc. Behavioral progress monitoring
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
54. The skill to:
Disaggregate data by race, gender, free/reduced lunch, language proficiency, and disability status
- NS (No Skill)
 - MnS (Minimal Skill)

- SS (Have Skill, but Need Support)
- HS (Highly Skilled)
- VHS (Very Highly Skilled)

55. The skill to:

Use technology in the following ways:

- a. Access the internet to locate sources of academic and behavioral evidence-based interventions.
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
- dd. Use electronic data collection tools (e.g., PDAs, computers, iPads)
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)
- ee. Use software to save, report, and graph data (e.g., Aimsweb, STAR, Infinite Campus)
 - NS (No Skill)
 - MnS (Minimal Skill)
 - SS (Have Skill, but Need Support)
 - HS (Highly Skilled)
 - VHS (Very Highly Skilled)

56. The skill to:

Facilitate an RTI team meeting.

- NS (No Skill)
- MnS (Minimal Skill)
- SS (Have Skill, but Need Support)
- HS (Highly Skilled)
- VHS (Very Highly Skilled)

Vita

Kaylie Rose Kittner was born in Raleigh, North Carolina. After graduating from William G. Enloe High School in June 2009, she attended American University in Washington, District of Columbia for one semester in the fall of 2009. She then enrolled at Appalachian State University in Boone, North Carolina in January 2010 and was awarded a Bachelor of Science in Psychology degree in May 2013. In the fall of the same year, she accepted a Graduate Teaching Assistantship position and began study toward Master of Arts and Specialist in School Psychology degrees at Appalachian State University. In August 2015, Kaylie began a school psychology internship with Nash Rocky Mount Public Schools and was awarded an MA/SSP in May 2016.