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An Adaptation and Psychometric Evaluation of the Teacher Attribution Measure for Early Elementary (TAM-EE)

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AN ADAPTATION AND PSYCHOMETRIC EVALUATION OF THE TEACHER

ATTRIBUTION MEASURE FOR EARLY ELEMENTARY (TAM-EE)

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Abstract

AN ADAPTATION AND PSYCHOMETRIC EVALUATION OF THE TEACHER ATTRIBUTION MEASURE FOR EARLY ELEMENTARY (TAM-EE)

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This study examined the reliability and validity of the Teacher Attribution Measure for Early Elementary (TAM-EE), a measure adapted from the Preschool Teaching Attributions (PTA) measure, to assess the challenging behavior attributions of early elementary teachers. Like the PTA, the TAM-EE uses a series of student-specific behavior scenarios as prompts for teachers who then rate statements aligned with dimensions of attribution theory on a 6-point scale. A sample of 41 teachers completed the TAM-EE on 79 students in grades K-3 screened for risk of emotional and behavioral disorders (EBD). Teachers also completed reports of student behavior, self-efficacy, and perceptions of the student-teacher relationship. Results of a confirmatory factor analysis suggest that the two-factor model (*Causal* and *Responsibility*) used for the PTA was best fit. Combined with significant correlations with measures assessing teacher perceptions and practices, this study provides both an initial psychometric evaluation of the TAM-EE and additional support for the validity and reliability of the PTA.

Chapter 1

Introduction

Early elementary school is a critical time for the development of students' academic, social, and behavioral skills (Myers & Pianta, 2008). However, some students begin their schooling without the foundational skills necessary to grow and succeed. In turn, these students frequently demonstrate challenging behavior that can negatively impact their education and increase their risk for more serious behavioral difficulties or emotional and behavioral disorders (EBD; Conroy, Sutherland, Snyder, & Marsh, 2008; Spilt, Koomen, Thijs, & van der Leij, 2012). This risk tends to grow over time and may be fueled, in part, by negative interactions with teachers (O'Connor, Dearing, & Collins, 2011; Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008). Continued negative interactions are particularly harmful for students, as persistent interpersonal adversity is strongly associated with poor academic outcomes and school adjustment (Spilt et al., 2012).

Negative interactions between teachers and students can also influence the quality of the student-teacher relationship, which develops over time based on individual characteristics and specific interactions (Birch & Ladd, 1998; Howes, Phillipsen, & Peisner-Feinberg, 2000; Mantzicopoulos & Neuharth-Pritchett, 2003; Pianta, Hamre, & Stuhlman, 2003). This is critical for students with or at-risk for EBD, as high-quality student-teacher relationships are associated with reductions in internalizing and externalizing behaviors in young children, and increased closeness in the student-teacher relationship is associated with decreased student anxiety, improved social skills, and better peer interactions (Baker, Grant, & Morlock, 2008; Ladd & Burgess, 2001; O'Connor et al., 2011). For struggling students, research suggests that a positive relationship with at least one caring adult, most frequently a teacher, may be the most important

factor influencing academic, social, and behavioral outcomes (Gambone, Klem, & Connell, 2002; Pianta et al., 2003). Further, students who exhibit frequent externalizing behaviors may have increased conflict with teachers, which can lead to a cycle of negative interactions and elevated student-teacher conflict over time (Doumen et al., 2008).

While the contributions of students and teachers to these interactions depend on various factors, a key aspect of student-teacher relationships is the perception of both individuals, particularly about the relationship itself. These perceptions, which may be composed of past interactions, emotions, beliefs, or attributions, can impact future student-teacher interactions and the development of the relationship (Pianta et al., 2003; Thijs & Koomen, 2009). While student-teacher relationships are frequently assessed with the Student-Teacher Relationship Scale (STRS; Pianta, 2001), which prompts teachers to rate their perceived level of closeness, conflict, and dependency with individual students, few studies have explored the contribution of individual teacher-level factors to the student-teacher relationship. Given the frequent use of teacher-reported measures like the STRS, it is important to examine the impact of systematic differences in teacher characteristics to better understand the complexities of the student-teacher relationship (Thijs & Koomen, 2009).

Teacher Attributions for Challenging Behavior

One teacher-level characteristic that may have an impact on teacher perceptions of the student-teacher relationship, and thus long-term student outcomes, is a teacher's attributions for student behavior. Broadly, attributions are the causal explanations people develop for actions, behaviors, and mental states (Fiske & Taylor, 2013). In the classroom, it is possible that attributions act as a mediator between a student's behavior and a teacher's reaction (Figure 1; Dix, Ruble, Grusec, & Nixon, 1986).

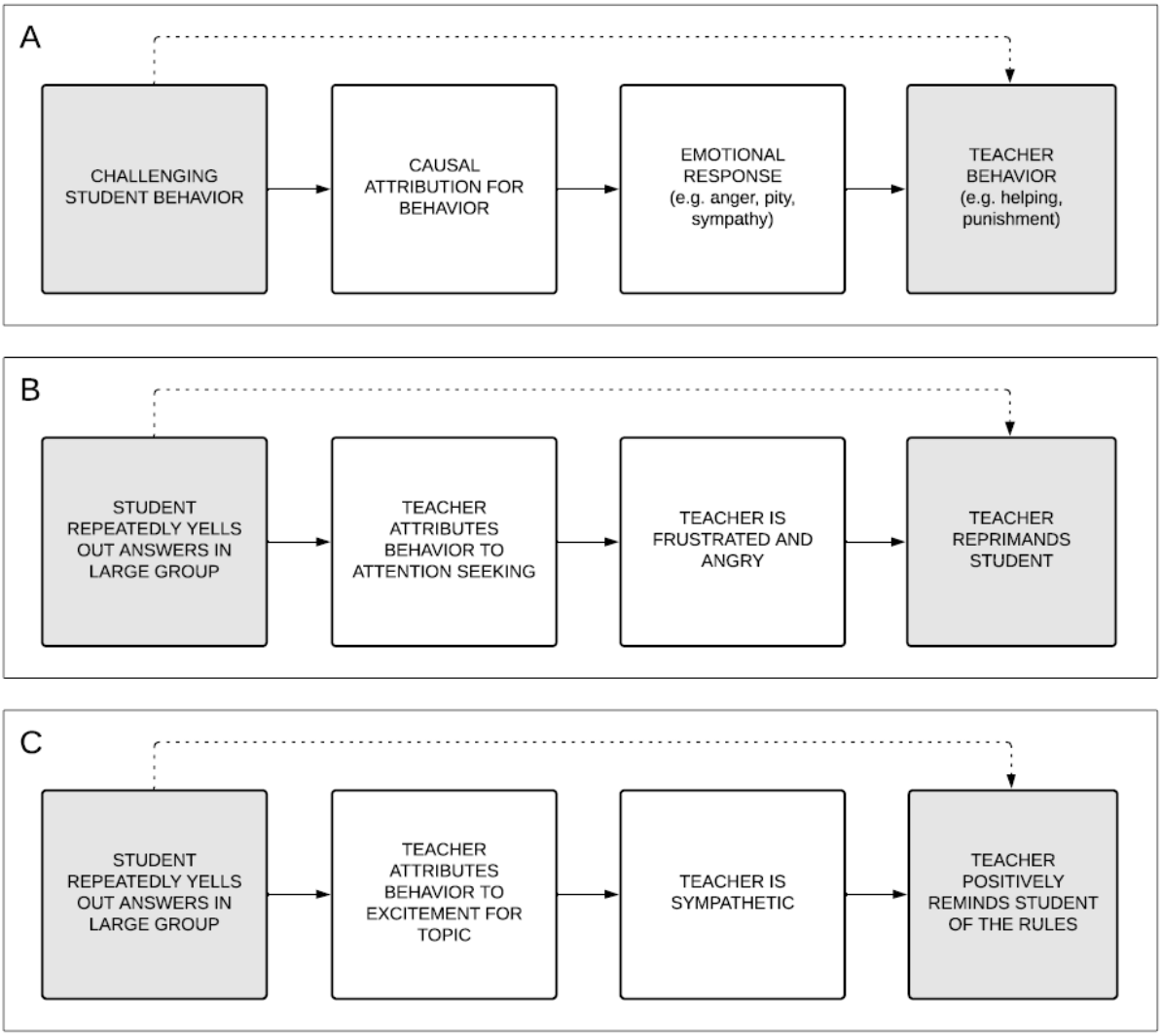

Figure 1. Teacher behavior attributions in the classroom

Attribution Theory

Though attribution theory was initially used to better understand the human desire to predict and control the future (Heider, 1958), Weiner's attributional theory (1985) extended the model to include expectations, emotions, and behavior (Fiske & Taylor, 2013). Weiner (2001) also noted the distinction between interpersonal and intrapersonal attributions. Interpersonal attributions, or attributions made for the behavior of others, are frequently characterized along

three dimensions: *locus*, whether the perceived cause resides within the person (internal) or in the environment surrounding the person (external); *stability*, the extent to which the perceived cause remains stable or changes over time; and *control*, the extent to which the person is believed to have control over the outcomes. In contrast, intrapersonal attributions are those individuals make for their own actions.

Attributions in the classroom. In a systematic review of the prevalence, correlates, and consequences of teachers' causal attributions, Wang and Hall (2018) note the longstanding use of Weiner's theory as a framework for examining attributions in the classroom. They also highlight the emergence of two common themes over decades of studies; specifically, the prevalence of the fundamental attribution error and consistent moderating factors.

Fundamental attribution error. Across various studies of teacher attributions, for both academic performance and behavior, research has found clear evidence of the fundamental attribution error (Wang & Hall, 2018). Sometimes known as the "actor-observer bias" (Jones & Nisbett, 1971), this phenomenon is the tendency of observers to underestimate the role of environmental or situational factors and overestimate the impact of personality-related factors on behavior (Ross, 1977). For example, in the classroom, teachers commonly attribute challenging behaviors to student-related factors (e.g. home, family) instead of their own teaching practices. Research on the fundamental attribution error suggests that this is commonly done in an effort to self-protect (Heider, 1958; Ross 1977).

Moderating factors. Over decades of studying attributions in the classroom, researchers have identified multiple factors that tend to the moderate the causal attributions made by teachers. Years of experience often stands out as a moderator, which may be due to unrealistic beliefs in the ability to improve student outcomes. Thus, veteran teachers frequently attribute

challenging student behavior to factors outside their control (Georgiou, 2008; Wang & Hall, 2018). Additionally, there is some evidence that teachers with more experience teaching students with disabilities are likely to see student failure as external and controllable (Brady and Woolfson, 2008; Woolfson et al., 2007), however, there is little research examining the impact of special education experience on teacher attributions for challenging student behavior (Simms, 2014).

Teachers also tend to make different attributions for behavior based on student demographic characteristics. For example, challenging behaviors demonstrated by students from ethnic minority backgrounds are frequently attributed to internal factors, like the student's personality, while teachers often attribute the behaviors of ethnic majority peers to external factors (Jackson, 2002; Wang & Hall, 2018). Similarly, for student gender, the challenging behavior of girls is frequently attributed to internal, controllable factors like personality, while teachers tend to see the behavior of boys as unintentional (Arbeau & Coplan, 2007; Wang & Hall, 2018).

Teacher attributions for behavior. While attribution theory is more commonly applied to motivation and achievement in the education literature, several studies have examined teacher perceptions of challenging student behavior and the behaviors or interactions that follow (e.g. Andreou & Rapti, 2010; Poulou & Norwich, 2002; Reyna & Weiner, 2001). Findings from these studies tend to support both Weiner's attribution model and the frequency of the fundamental attribution error, with teachers often attributing challenging behavior to student's personality or family (e.g., Arcia et al., 2000; Medway, 1979). Further, research has found teachers' intrapersonal attributions for both their instructional practices and occupational stress can impact

the likelihood of seeking help and accepting interventions (Bibou-Nakou, Kiosseoglou, & Stogiannidou, 2000; Brophy et al., 1981; Simms, 2014; Wang & Hall, 2018).

Though limited, research in this area highlights the importance of assessing teacher attributions for challenging student behavior, as the perceptions align with multiple factors that may contribute to long-term positive student outcomes. Among these factors are specific teacher beliefs and practices that closely relate to attributions teachers make for the challenging behavior occurring in their classrooms.

Related Variables

Reports of challenging behavior. Early literature from research in the parenting field notes the association between behavior attributions and perceptions of challenging behavior, as parents with negative behavior attributions are more likely to report that their children demonstrate higher levels of challenging behavior (Carter, Williford, & LoCasale-Crouch, 2014). Further, the parenting literature suggests that those with negative behavior attributions are more likely to see neutral child behavior as negative (Johnston & Ohan, 2005). Given the frequent use of hypothetical situations in measuring attributions in education, this relationship has been tested less often. However, with teacher reports of behavior and attributions collected simultaneously, it was expected that teachers' negative behavior attributions would be similar to those from the parenting literature and positively correlated with negative perceptions of student behavior.

Classroom quality. Research in both the parent and education fields also suggests a relationship between behavior attributions and practices used to manage child behavior (Carter et al., 2014). Though studies have not examined the direct association between negative attributions and punitive discipline, researchers have found a relationship between teacher-reported practices and attributions (Andreou & Rapti, 2010; Bibou-Nakou et al., 2000). Given this foundation,

Carter and colleagues (2014) used classroom observations to examine the association and found that more negative attributions were linked with reduced classroom quality, specifically in the domain of emotional support. Thus, it was expected that decreased student support would be correlated with more negative attributions.

Teacher self-efficacy. Teacher self-efficacy, or a teacher's belief in their ability to effectively manage behavior and instruction in the classroom, is an individual teacher characteristic developed based on early theories of locus of control (Rotter, 1966) and Bandura's social cognitive theory (1977), making it likely to be associated with teacher attributions for student behavior (Zee & Koomen, 2016). The work of Rotter (1966), who conceptualized locus as an expectancy for control that individuals develop based on their environment, helped lay the groundwork for early self-efficacy measures used in education. However, as Bandura (1977) added to Rotter's theories, he noted the importance of differentiating between locus-conceptualized outcome expectancies and self-efficacy (Zee & Koomen, 2016). Over time, these distinct factors, then labeled personal teaching efficacy and general teaching efficacy, were confirmed and included in common measures of teaching self-efficacy, such as the Teacher Self-Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). Given this close link, it was expected that higher teacher self-efficacy, particularly in classroom management, would be associated with more positive attributions for challenging student behavior.

Student-teacher relationships. Though few studies have directly assessed the link between student-teacher relationships and teacher attributions for behavior, teacher reports of the relationship reflect feelings and perceptions of interactions with individual students (Pianta et al., 2003; Thijs & Koomen, 2009). Further, a teacher's impressions of the individual characteristics and behaviors of a student immediately influence the bond formed between the teacher and

student. Therefore, challenging behavior can delay the development of positive student-teacher relationships depending on the teacher's unique beliefs and attributions for challenging student behavior (Pianta et al., 2003). Thijs and Koomen (2009) explored teacher attributions of control as a moderator of social problems and teacher perceptions of the student-teacher relationship. Results suggested that challenging behaviors attributed to factors within the student's control predicted decreases in student-teacher closeness. Thus, it was expected that negative teacher attributions for behavior would be associated with negative perceptions of the student-teacher relationship, particularly in the closeness dimension.

Measurement

Despite the value of understanding teacher attributions for disruptive student behavior, few psychometrically sound measures assess the construct, likely due to its difficult to measure, internal nature (Carter et al., 2014). Further, existing measures based on research from the parenting literature (e.g., Black, Heyman, & Slep, 2001; Johnston & Ohan, 2005; Williford et al., 2009; Table 1) frequently center on a series of hypothetical vignettes that depict challenging behavior and are aimed at understanding teacher responses (Kulinna, 2007; Mavropoulou & Padeliadu, 2002; Poulou & Norwich, 2000). While these measures tap into an aspect of the construct, research suggests teacher responses to vignettes may be inconsistent with attribution theory and responses to accounts of real incidents between teacher and a particular student may be a better indicator (Lucas, Collins, & Langdon, 2009). Similarly, studies finding within-teacher variation in behavior attributions highlight the need to examine the construct at the individual child-level (Jager & Denessen, 2015).

Table 1

Existing Attribution Measures

Measure	Teacher Report of Behavior Attribution	Use in Grades K-3	Child-level Attributions	Real Incidents in Vignettes
Attribution Inventory (Poulou & Norwich, 2000)	Yes	Yes	No	No
Attributional Style Measure for Parents (ASMP; O'Brien & Peyton, 2002).	No	No	Yes	Yes
Behavior Attribution Survey (BAS; Kulinna, 2007)	Yes	Yes	No	No
Single Vignette (e.g. Mavropoulou & Padeliadu, 2002; Andreou & Rapti, 2010)	Yes	Yes	No	No
Preschool Teaching Attributions (PTA; Carter et al., 2014),	Yes	No	Yes	Yes
Achievement Attribution (e.g. Jager & Denessen, 2015)	No	Yes	Yes	Yes

The Preschool Teaching Attributions measure. The PTA (Carter et al., 2014; Appendix A), which was adapted from the Attributional Style Measure for Parents (ASMP; O'Brien & Peyton, 2002), asks teachers to create their own vignettes based on real classroom situations. To encourage internal, automatic thinking, the PTA asks the teacher to answer identifying questions about a child in the classroom they will be considering. The teacher is then asked to describe a recent classroom situation in which the child displayed a specific behavior, such as noncompliance or disrespect (Carter et al., 2014). For each behavior, the teacher is asked to rate statements aligning with dimensions of attribution theory (e.g. locus, stability, controllability) on

a 6-point scale. After aggregating scores across the scenarios, results reveal a subscale score for each attributional dimension.

Confirmatory factor analysis (CFA) examining the factor structure of the PTA reflected the two-factor structure of the ASMP from which it was adapted (Carter et al., 2014). Thus, two subscales created in association with each factor: *Causal* (globality, stability, internal/external locus) and *Responsibility* (purposefulness, motivation, blame, and negative intent). Though Cronbach's alpha coefficients revealed good internal consistency (*Causal* = .77 and *Responsibility* = .85), replication is needed to confirm the reliability and validity of the PTA. Additionally, adaptation of the measure to different grade levels will help fill an existing gap in student-level measures based on real classroom situations.

Present Study

The aim of this study was to evaluate the reliability and validity of scores for a measure adapted from the PTA to assess early elementary (K-3) teachers' attributions for challenging student behavior. A confirmatory factor analysis (CFA) was used to show that the adapted measure, the Teacher Attribution Measure for Early Elementary (TAM-EE; Appendix B), demonstrates strong reliability, with the hypothesis that each scenario and subscale would load onto one of two established factors (*Causal* and *Responsibility*). Further, the study aimed to examine correlations between teacher attributions for student behavior and teacher practices, teacher reports of self-efficacy, perceptions of the teacher-student relationship, and perceptions of student behavior. It was hypothesized that scores from subscales of the TAM-EE would correlate with subscales of established measures, Classroom Atmosphere Rating Scale (CARS; Wehby, Dodge, & Greenberg, 1993), the Social Skills Improvement System (SSIS; Gresham & Elliot, 2008), the School Social Behavior Scale (SSBS-2; Merrell, 2002), the Student-Teacher

Relationship Scale (STRS; Pianta, 2001), and the Teacher Sense of Self-Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) in theoretically expected directions.

Chapter 2

Review of Literature

Up to 20% of young children demonstrate challenging behaviors that can lead to increased teacher stress, negatively impact student-teacher relationships, and contribute to high rates of teacher attrition (Bibou-Nakou, Stogiannidou, & Kiosseoglou, 1999; Birch & Ladd, 1998). However, few teacher preparation programs adequately prepare pre-service teachers to manage problem behaviors, particularly for teachers of students with or at-risk for emotional and behavioral disorders (EBD; Hart & Diperna, 2017). This lack of knowledge can leave teachers feeling powerless and, without the skills necessary to positively respond in the classroom, may lead to increased use of punitive or exclusionary discipline approaches (Lorenzo, 2017; Okonofua, Paunesku, & Walton, 2016). Unfortunately, punitive discipline is associated with increased challenging behavior and may fuel negative interactions between teachers and students as teachers continuously struggle to manage their classrooms (O'Connor et al., 2011; Sutherland et al., 2008).

Impact of Teacher Attributions

Weiner's (1985) interpersonal attribution theory posits that individuals respond to actions or experiences based on the perceived behavior or intentions of others. Causal attributions are particularly relevant in unexpected situations, like challenging classroom behavior, as they encourage the search for an explanation. In turn, attributions impact a teacher's emotional and outward response to the student (e.g., their interactions; Figure 1a). For example, a teacher may perceive a student's frequent outbursts as controllable and, out of frustration or anger, will reprimand the student (Figure 1b). However, if the teacher attributes the interruptions to an

uncontrollable classroom situation, the teacher may feel sympathetic toward the student and use helping strategies in addressing the behavior (Figure 1c).

A better understanding of teacher attributions could be used in the development and implementation of interventions aimed at improving student behavior, as studies indicate that a teacher's understanding of the source and rationale for challenging student behavior can impact their willingness to change classroom practices and adopt recommended interventions (Andreou & Rapti, 2010; Bibou-Nakou et al., 2000; Carter et al., 2014). To combat this thinking, strategies developed for programs such as Attributional Retraining (AR), which aims to positively shift causal attributions, could be used to address both the interpersonal and intrapersonal attributions of teachers prior to intervention implementation. Thus, with the knowledge gained from attribution measures, teachers can be supported in both personal reflection and the use of practices that make them more attentive to their individual students' behavioral and learning needs (Lucas et al., 2009; Wang & Hall, 2018).

Measuring Teacher Attributions

Despite the value of understanding teacher attributions for challenging student behavior, few psychometrically sound measures assess the construct, as it is difficult to reliably measure cognitive, non-observable variables (Carter et al., 2014; Hussain, 2016). Further, most existing measures rely on vignettes describing hypothetical narratives of student behavior. Though these measures can be useful for gaining some insight, without commonly accepted dimensions or standardized measures it is difficult for researchers to replicate or generalize the results of studies that are conducted. Therefore, the purpose of this systematic literature review is to: (1) identify the dimensions characterized in the literature on teacher attributions for elementary student

behavior and (2) distill commonalities among existing assessments to inform future measure and subscale development.

Literature Search

I used PsycINFO, Elton B. Stephens Company (EBSCO), and Education Research Information Center (ERIC) to conduct a systematic review of the literature and identify articles with empirical data on teacher attributions for student behavior in elementary classrooms published between 1980 and April 2018. While it is likely studies were published prior to 1980, this year marked the publication of Weiner's foundational attribution-emotion-action model of motivated behavior (Weiner, 1980). The following string of terms was used in each database: ab(appraisal* OR perception* OR causal* OR attribution* OR interpersonal) AND ab("problem behavi*" OR "challenging behavi*" OR "behavi* problem*" OR "behavi* disorder*" OR EBD OR aggressive* OR defiant OR "disruptive behavi*" OR misbehavi*) AND (elementary OR kindergarten OR primary) AND (teacher* OR instructor* OR educator*). Ideally, grey literature including dissertations, conference proceedings, and other non-peer reviewed publications would be included in the initial search to help reduce publication bias. However, due to time constraints, this study focused only on peer-reviewed literature and resulted in the identification of 698 unique articles (Figure 2).

Selection Criteria

The title and abstract of the 698 articles were examined for inclusion using the following selection criteria:

1. The study used a quantitative or mixed-methods research design.
2. The mean grade of participants fell between kindergarten and fifth, or within an equivalent age range (i.e. 5-11).

3. The study took place in a school or educational setting with teacher and student participants.
4. The study was published in English in a peer-reviewed journal.
5. The study included a teacher-reported measure of attributions for or perceived causes of student behavior.

Following the exclusion of 628 articles, I screened the full text of the 70 remaining studies with the same inclusion criteria. This resulted in the exclusion of 45 articles, including two due to methodology (Kauffman & Wong, 1991; Wang, Hall, & Rahimi, 2015), nine excluded due to age of the participants (e.g. Chang, 2013), and two excluded for publication language (Keresteš, 2007; Stadler, Janke, & Schmidt-Atzert, 1997). Finally, 32 articles were not included in the sample because they did not measure teacher attributions for challenging student behavior (e.g. Pas, Bradshaw, Cash, & Debnam, 2015; Thijs, Koomen, & van der Leij, 2008). Twenty-five percent of the resulting articles were double coded with 100% interobserver agreement.

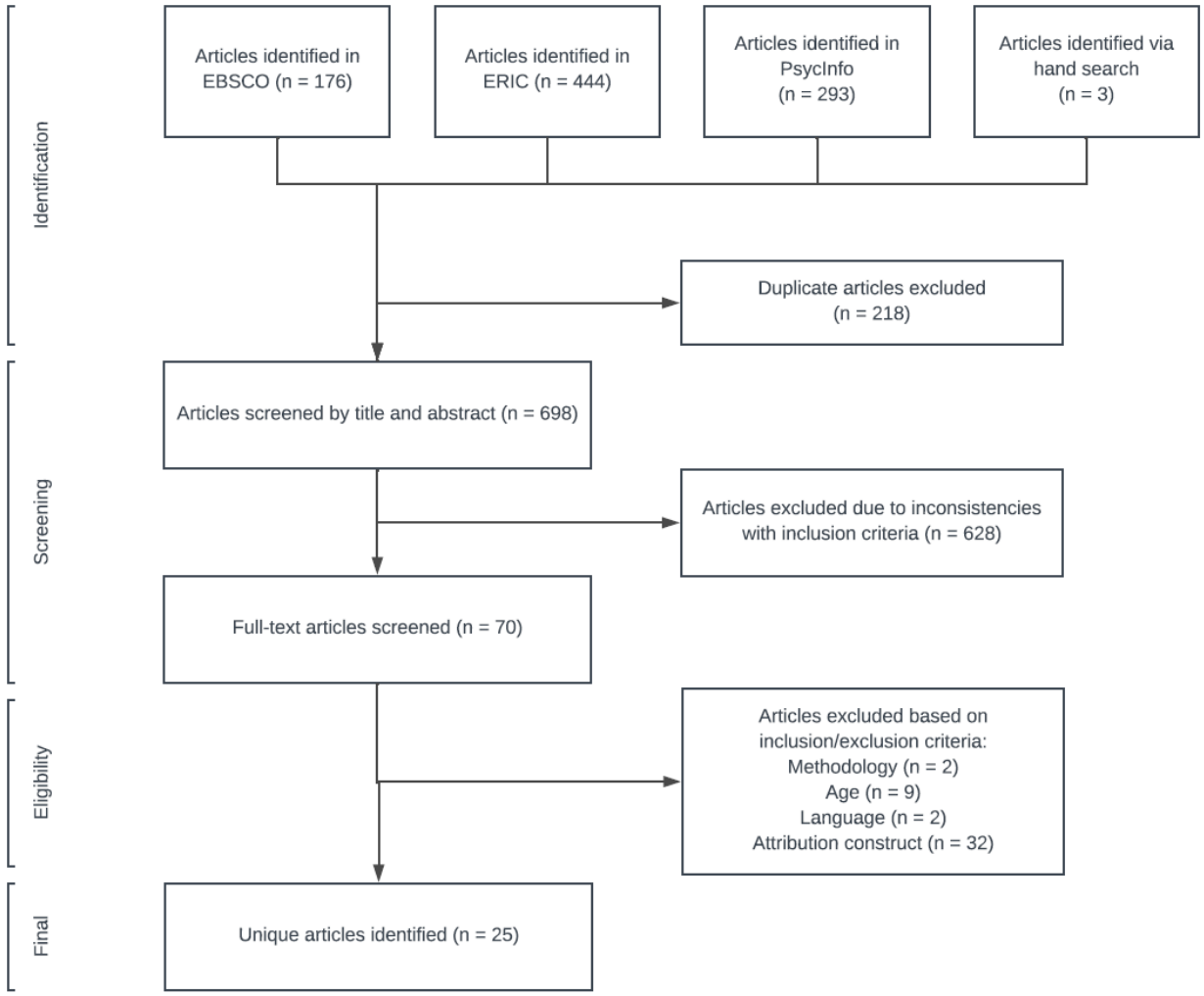

Figure 2. Inclusion and exclusion decisions

Results

The method described above resulted in the inclusion of 25 peer-reviewed articles. Nearly all of the results were quantitative, with the exception of four mixed-method studies that used interviews to assess teacher attributions (Atici & Merry, 2001; Brophy et al., 1981; Hughes, Barker, Kemenoff, & Hart, 1993; Poulou & Norwich, 2002). In total, the 25 articles sampled 3,657 participating teachers from 11 countries, including Canada, China, Greece, Ireland, Israel, the Netherlands, Malaysia, Russia, Turkey, the United Kingdom, and the United States. Adequacy of reporting demographics varied and were particularly lacking in student data.

However, 80% of the studies did include a measure of average teaching experience, which is commonly cited as a predictor of teacher attributions for behavior (see Table 2). Given the purpose of this review, results will focus on detailing how teacher attributions for challenging student behavior are measured and the dimensions commonly assessed in the literature.

Measure of Attributions

Only five (Sugawara & Cunningham, 1988; Goyette, Doré, & Dion, 2000; Hart & Diperna, 2017; Kulinna, 2007; McAuliffe, Hubbard, & Romano, 2009) of the 25 studies (20%) used or modified previously established attribution measures, which highlights both the difficulty in comparative assessment as well as the need for standardized, psychometrically sound tools. The remaining studies employed the use of either open-ended responses or vignettes, with some opting for a combination of both (e.g. Lovejoy, 1996).

Vignettes and Likert-type scales. Though most studies combined hypothetical vignettes with Likert-type responses, the measures took a variety of forms and resulted in numerous unique assessments. Vignettes ranged from a description of a hypothetical child displaying problem behavior (Andreou & Rapti, 2010; Guttmann, 1982) to eight scenarios depicting male and female students engaging in various activities and behaviors (Arbeau & Coplan, 2007). These vignettes were used to assess teacher attributions through responses on Likert-type scales with various anchors. In some cases, the anchors were specific to the given scenarios (e.g. "*This child might be going through a phase or stage that will end soon, or this child might keep on acting this way* (from 1 [*definitely a stage that will pass*] to 5 [*definitely will act this way in future*]; midpoint 3 [*it could be either way*]"; Arbeau & Coplan, 2007, p. 299). Others provided participants with a list of causal statements, such as lack of interest or bad mood, and asked them to rate their agreement with the cause (e.g. Bibou-Nakou, Kiosseoglou, & Stogiannidou, 2000;

Bibou-Nakou, Stogiannidou, & Kiosseoglou, 1999; Guttmann, 1982; Kulinna, 2007). Two studies modified this approach by having teachers attribute a percentage of problem behavior to different factors (Butler & Monda-Amaya, 2016) or choose the most likely causes from a list (Ding, Li, Li, & Kulm, 2010).

Open-ended responses. Though variations on Likert-type scales were the most common method of assessing teacher attributions for challenging behavior, eight of the resulting studies used teacher interviews (Atici & Merry, 2001; Brophy et al., 1981; Hughes et al., 1993; Poulou & Norwich, 2002) or relied on open-ended responses (Aldrich & Martens, 1993; Goyette et al., 2000; Lovejoy, 1996; Zakaria, Reupert, & Sharma, 2013). The results of the eight articles were coded in various ways; however only two studies used open coding to develop new conceptualizations of themes (Poulou & Norwich, 2002; Zakaria et al., 2013). The remaining six studies were coded along attribution dimensions established by the author (Aldrich & Martens, 1993; Atici & Merry, 2001; Brophy et al., 1981; Goyette et al., 2000; Hughes et al., 1993; Lovejoy, 1996).

Assessed Dimensions of Attribution

Several common characteristics emerged from evaluating the dimensions of attribution each study assessed. These perceived causes generally aligned with those established by Weiner (1985): locus, stability, and controllability. The dimensions of responsibility, intentionality, and globality were also frequently identified (e.g., Brophy & Rohrkemper, 1981; Lovejoy, 1996; Poulou & Norwich, 2002).

Locus, stability, and control. The frequent assessment of causal locus in the resulting articles aligned with Weiner's (2014) suggestion that locus is the most fully embraced attribution dimension. Locus, or location, is frequently characterized as a continuum from factors internal to

the student to factors external to the student (Table 3). While some studies retained the simplified categorization of internal and external locus, 13 of the 25 studies assessed teacher attributions based on family, student, teacher, and school-related factors. Though several articles used different terminology (i.e. *individual characteristics, background environment, behavior, behavior setting*; Aldrich & Martens, 1993) or reduced the number of factors (i.e. *pupil-related, family-related, school-related*; Andreou & Rapti, 2010), this was the most common characterization across studies. The dimension of stability, which is the perceived likelihood of behavior continuing, was assessed in ten articles, all of which also measured locus. This deviates from attribution theory, as Weiner (2014) notes the relative independence of locus and stability. The dimension of controllability, however, is theorized to overlap with both locus and stability, as found in the literature with just one of eight article measuring controllability alone (Hart & Diperna, 2017).

Other dimensions. In addition to locus, stability, and controllability, five of the reviewed studies examined other dimensions of teacher attribution for challenging student behavior. Though Weiner (1985) once viewed causal controllability and responsibility as a single factor, in later work he identified responsibility as a judgment based on perceptions of controllability, a distinction evident in two studies (Lovejoy, 1996; Poulou & Norwich, 2002). In combination with locus, stability, and controllability, one study (Brophy et al., 1981) also explored dimensions of intentionality and globality, which are commonly seen as determinants of responsibility.

Table 2

Studies Measuring Teacher Attributions for Elementary Student Behavior

Authors (Year)	Participants & Teaching Experience	Measure of Attributions	Dimensions			
			Locus	Stability	Control	Other
Aldrich & Martens (1993)	48 elementary teachers; 10 years exp	open-ended list of causes based on video	X[a]			
Andreou & Rapti (2010)	249 elementary teachers; 16 years exp	Likert scale; vignette	X[a]			
Arbeau & Coplan (2007)	202 K teachers; 14 years exp	Likert scale; vignette	X	X	X	
Atici & Merry (2001)	12 elementary teachers; 13 years exp	semi-structured interviews	X[a]	X		
Bibou-Nakou, Stogiannidou, & Kiosseoglou (1999)	200 elementary teachers; 61% < 5 yrs exp	Likert scale; list of causal statements	X			
Bibou-Nakou, Kiosseoglou, & Stogiannidou (2000)	200 elementary teachers; 61% < 5 yrs exp	Likert scale; list of causal statements	X			
Brophy & Rohrkemper (1981)	98 elementary teachers; 3+ years exp	interview responses to vignette	X	X	X	intentionality; globality
Butler& Monda-Amaya (2016)	255 pre-service teachers	attribute percentage of behaviors in video to different dimensions	X			

[a] Locus is further divided into family-related, school-related, student-related, and/or teacher-related factors

Authors (Year)	Participants & Teaching Experience	Measure of Attributions	Dimensions			
			Locus	Stability	Control	Other
Sugawara & Cunningham (1988)	152 pre-service teachers	Causal Dimensions Scale (Russell, 1982); Likert scale	X	X	X	
Ding et al. (2010)	244 K-12 teachers; 56% > 10 yrs exp	ranking list of causal statements	X[a]			
Gibbs & Gardiner (2008)	221 K-12 teachers	Likert scale; list of causal statements	X[a]			
Goyette, Doré, & Dion (2000)	154 pre-service teachers	Report Card on Disciplinary Incident (Brunelle et al., 1993); open-ended response	X[a]			
Guttman (1982)	28 4-6 teachers	ranking of causal statements; vignette	X	X		
Hart & DiPerna (2017)	272 K-12 teachers; 61% < 10 yrs exp	modified Revised Causal Dimensional Scale (McAuley et al., 1992); Likert scale			X	
Hughes, Baker, Kemenoff, & Hart (1993)	55 2-4 teachers; 12 yrs exp	interview responses to vignettes (Brophy & Rohrkemper, 1981)	X[a]	X	X	
Johansen, Little, & Akin-Little (2011)	42 elementary teachers; 15 yrs exp	Likert scale; list of causal statements	X[a]	X	X	
Kulinna (2007)	199 phys ed teachers; 57% 4-20 yrs exp	Behavior Attribution Survey; Likert scale; vignette	X[a]			

[a] Locus is further divided into family-related, school-related, student-related, and/or teacher-related factors

Authors (Year)	Participants & Teaching Experience	Measure of Attributions	Dimensions			
			Locus	Stability	Control	Other
Lovejoy (1996)	227 pre-service teachers	open-ended response; Likert scale	X	X	X	responsibility; knowledge; capacity; deviance
Mavropoulou & Padeliadu (2002)	305 elementary teachers; 14 yrs exp	Likert scale; list of causal statements	X[a]			
McAuliffe, Hubbard, & Romano (2009)	12 2nd grade teachers	modified Written Analog Questionnaire (WAQ; Johnston et al. 2000); Likert scale	X	X		
Poulou & Norwich (2002)	391 elementary teachers; 38% < 9 yrs exp	semi-structured interviews; Likert scale; vignette	X[a]			responsibility
Savina et al., (2014)	80 elementary teachers; 19 yrs exp	Likert scale; list of causal statements	X[a]			
Thijs & Koomen (2009)	81 K teachers	Likert scale; list of causal statements	X	X	X	
Tunaz (2017)	30 first year teachers	Likert scale; list of causal statements	X[a]			
Zakaria, Reupert, & Sharma (2013)	100 pre-service teachers	open-ended response	X[a]			media

[a] Locus is further divided into family-related, school-related, student-related, and/or teacher-related factors

Table 3
Descriptions and Classroom Examples of Attribution Dimensions

Dimension	Description	Classroom Example
Locus	What is the perceived location of the behavior (internal vs. external)?	Was the student's aggression toward a classmate due to their mood (internal) or aggression that occurs at home (external)?
Stability	What is the perceived likelihood of the behavior continuing?	Is the student's aggression toward a classmate likely to happen repeatedly?
Control	What is the perceived ability of the student to control the behavior?	Is the student able to control their aggressive behavior toward classmates?
Responsibility	Who or what is perceived as accountable for the behavior?	Should the student be disciplined for their aggression toward a classmate?

Discussion

The purpose of this systematic literature review was to investigate the dimensions used to characterize teacher attributions for challenging student behavior and, based on their commonalities, to establish a set of factors for potential use in subscale or measure development. A search of three databases resulted in the identification of 698 articles, which were reduced to 25 studies based on the inclusion criteria. In coding the articles, three broad dimensions of teacher attribution for challenging student behavior emerged: locus, stability, and control. Despite limitations of both the individual studies and the methods used in this review, the successful distillation of attribution dimensions has both practical implications and implications for future research.

Beyond this distillation, which falls in line with Weiner's (1985) theory, the most pronounced pattern to emerge from the results is the further division of locus into the distinct categories of family, student, teacher, and school-related factors. Though the origins of this division are outside the scope of this review, a growing research application is evident in the literature. In 1981, Brophy and colleagues used a broad assessment of locus of control (internal vs. external), which later served as a framework for the four-factor coding system Hughes and colleagues (1993) used to code teacher interviews. It appears that these early mixed-method studies identified the four distinct factors of causal locus (Aldrich & Martens, 1993; Hughes et al.) and served as a guideline for later quantitative measure development, as nearly half of the reviewed studies assessed family, student, teacher, and school-related factors.

The results of the literature review also highlight the less frequent use of the dimensions of stability and controllability, which were found in ten and eight articles, respectively. These results may be due, in part, to the use of vignette-based measures that increase the difficulty of assessing the perceived stability or controllability of student behavior. However, as noted by Weiner and others (1985; Reyna & Weiner, 2001), all three attribution dimensions can play a critical role in a person’s thoughts, feelings, and actions. This provides further insight into the current state of measurement in the literature on teacher attributions for challenging student behavior. While measures shared similar characteristics, with all of them detailing situations with hypothetical students, none of the 25 studies used the same standardized measure.

Finally, the noted inclusion of other dimensions, specifically responsibility, intentionality, and globality, raises questions regarding the role of judgments of responsibility in teacher attributions. In developing measures that focus on individual students and situations, it

may also be important to explore the connection between a teacher's judgments of responsibility and their responses to challenging student behavior.

Implications for Research and Practice

Because teachers who perceive challenging student behavior as controllable and stable may be less likely to see positive outcomes as obtainable, the assessment of teacher attributions for student behavior along the dimensions of locus, stability, and controllability has particularly important implications for the implementation of interventions (Reyna & Weiner, 2001). Further, as noted by Poulou and Norwich (2002), when teachers attribute challenging behaviors to factors within themselves, they tend to see EBD as remediable and may be more likely to seek out effective solutions for the behavior. Similarly, teacher perceptions of an intervention's likelihood of success, which may be influenced by their attributions for student behavior, can in turn affect acceptability of an intervention (Simms, 2014). Andreou and Rapti (2010) suggested that the effectiveness of behavioral interventions can be improved through a focus on the cognitive and affective responses of teachers, including attributions. Thus, data gathered from improved teacher attribution measures could be used prior to intervention implementation to help improve both the fidelity of teacher delivery and overall success of behavior interventions.

When developing standardized and psychometrically sound measures to assess teacher attributions for challenging student behavior, future research should focus on the use of student-specific classroom incidents to measure all three attribution dimensions across time. While the measures using teacher vignettes in the reviewed literature assess specific aspects of teacher attribution, research suggests that responses to hypothetical vignettes may be inconsistent with attribution theory and responses to accounts of real classroom situations could produce more valid results (Lucas et al., 2009). Specifically, Lucas and colleagues (2009) found significant

differences in teacher attributions of control for measures using real incidents of challenging behavior and those using vignettes. To accurately capture all three dimensions of attribution, researchers may need to shift from measures with broad, hypothetical vignettes to those with more student-specific behavioral incidents that can more clearly assess the dimensions of controllability and stability. While a teacher may be able to identify the cause of student behavior given a hypothetical classroom situation (e.g. “This student can't sit still during lessons. The child doesn’t follow directions. Sometimes the student acts inappropriately to get attention.”; Kulinna, 2007, p. 30), it is much more difficult to rate ability to control behavior in various settings without targeting a specific student or incident. Studies finding within-teacher variation in responses further highlight the need to examine attributions at the individual child-level (Jager & Denessen, 2015).

Some recent measures, including the Preschool Teaching Attributions measure (PTA; Carter et al., 2014), have followed these recommendations. The PTA retained the Likert-type scale of previous assessments, but first prompts teachers to think of an interaction with a specific student. After describing the incident and her response to the student behavior, the teacher rates her agreement with several statements (e.g. *The child was able to control whether or not he or she didn’t do what I asked*). Given the likelihood that attributions for challenging behavior can change depending on the student and classroom context, measures like the PTA can better account for this within-teacher variation and adapting it for elementary school teachers may be a promising first step (Lucas et al., 2009).

Recent qualitative research exploring the development of preservice teachers’ conceptualizations of challenging behavior (McMahon, 2013) suggests that teacher attributions are established prior to entering the profession but also change throughout a teacher’s career.

Longitudinal studies that further explore shifts in teacher attributions and identify antecedents to change in perception could benefit the field. Once identified, variables related to positive or negative shifts in attributions for challenging behavior can be targeted, particularly through interventions. Thijs and Koomen (2009) suggested that, given such information, school psychologists could help make teachers aware of biases in their attributions and better understand their relationships with specific students. This, in turn, would make the teachers less likely to use punitive disciplinary practices and more willing to accept the help of outside interventionists (Andreou & Rapti, 2010; Bibou-Nakou et al., 2000; Carter et al., 2014).

Limitations

Several limitations of the current review should be kept in mind while reviewing the results. First, one limitation of the literature reviewed is the variability of measures used in the 25 studies. Though many articles assessed attributions through behavior vignettes and Likert-type scales, few were psychometrically validated, which makes it difficult to compare results and establish broad conclusions. Similarly, while studies from 11 different countries provided a range of participants and variance in results, there is an increased chance that cultural norms or differences may have impacted outcomes. Despite the diversity of participants across countries, demographic information in most of the studies was limited, particularly regarding the students and setting of the schools.

Results of this review were also limited by the search strategy; specifically, that interobserver agreement was not conducted on the search itself, making it possible that articles were inadvertently excluded in the screening process. Additionally, the present review only included peer-reviewed journal articles, and it is possible that unpublished literature contained additional data that were not summarized. Future studies should include grey literature to ensure the broadest representation of data in a systematic review (Cook & Therrien, 2017). In restricting results to peer-reviewed articles, it is possible that inconclusive or null results were excluded and publication bias was introduced to the findings (Chow & Ekholm, 2018). However, given the descriptive nature of this review, bias may less likely be introduced due to the publication process that is often contingent on significant effects of programs or interventions. Further, though attribution and behavior-related words and phrases were identified and searched for in article titles and abstracts, it is possible that related studies did not use the same words and, as a result, were not included in the review.

Present Study

Teacher attributions for challenging student behavior can impact student-teacher relationships and, in turn, student outcomes. Understanding the intricacies of these attributions plays a critical role in helping teachers improve their relationships with students, their practices in the classroom, and the long-term trajectories of student behavior, particularly for students with or at-risk for EBD. However, as suggested by the results of this literature review, inconsistent measures with underdeveloped constructs may be preventing next steps in this area. Thus, this study aimed to evaluate the reliability and validity of scores for the Teacher Attribution Measure for Early Elementary (TAM-EE), a measure adapted to assess early elementary (K-3) teachers' attributions for challenging student behavior.

Chapter 3

Methodology

This study aimed to examine the psychometric properties of the TAM-EE, which was adapted from the PTA (Carter et al., 2014), to assess early elementary teachers' attributions for challenging student behavior. I analyzed data collected from two parent studies to examine the reliability and validity of the TAM-EE as well as the correlation of the measure's subscales with related teacher variables. I hypothesized that the measure would demonstrate strong reliability, with each of the TAM-EE scenarios and subscales loading onto one of two factors established by Carter and colleagues (2014). Further, I hypothesized that scores from the subscales of the TAM-EE would correlate with subscales of related measures, including the Classroom Atmosphere Rating Scale (CARS; Wehby et al., 1993), the Social Skills Improvement System (SSIS; Gresham & Elliot, 2008), the School Social Behavior Scale (SSBS-2; Merrell, 2002), the Student-Teacher Relationship Scale (STRS; Pianta, 2001), and the Teacher Sense of Self-Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) in theoretically expected directions. After summarizing results of a pilot study and describing participants from two parent studies, this chapter will provide a detailed overview of the psychometric analyses conducted in this study, which include a CFA to determine reliability and correlations to assess validity.

Pilot Study

Given preliminary evidence for reliability and validity, the TAM-EE retained the overall structure of the PTA (Carter et al., 2014). However, to adjust for age differences and a focus on students at-risk for EBD, the student behaviors prompted by the measure were adapted to align with select items from the Systematic Screening for Behavior Disorders (SSBD; Walker et al., 1994) and confirmed by experts in the field. For example, while the PTA prompts teachers to

consider student behaviors that were noncompliant with classroom routines, the TAM-EE focused on incidents of student emotion dysregulation (i.e. excessive crying, extreme fear, poor coping skills).

Twenty-six teachers (96% female) in three elementary schools volunteered to participate in the pilot study. In total, the teachers identified 44 focal students (82% male) as at-risk for emotional and behavioral disorders (EBD) using the SSBD (Walker et al., 1994). Efforts were made to balance the number of teachers representing each grade, with six kindergarten teachers, seven 1st grade, six 2nd grade, six 3rd grade, and one special education teacher participating. Fourteen of the teachers had less than five years of teaching experience, while six had been teaching for more than ten years. Descriptive statistics and results of a preliminary CFA are highlighted in Table 4 and Table 5.

Table 4

TAM-EE Pilot Means by Dimension and Behavior Scenario

Dimension	Noncompliance	Aggression	Emotion	Interruption	*Overall mean*
Purposefulness	4.58	4.52	3.83	4.26	4.30
Globality	4.51	3.72	4.22	4.81	4.32
Stability	3.76	3.22	3.68	3.83	3.62
Motivation	3.67	3.56	3.60	3.95	3.70
Locus	4.64	4.47	4.54	4.62	4.57
Blame	4.29	4.47	3.59	4.36	4.18
Negative intent	2.80	2.97	3.58	2.64	3.00
Controllability	4.47	4.08	3.71	4.43	4.17

Table 5

Confirmatory Factor Analysis Results for the TAM-EE Pilot

Analysis	Two Factor	One Factor
RMSEA	0.162	0.148
CFI	0.871	0.892
TLI	0.810	0.837
SRMR	0.073	0.097
Scale loadings		
Attributions - one factor		
Control		0.65
Stability		1.00
Locus		0.54
Causal and Responsibility – two factor		
Causal		
Globality	0.84	
Stability	0.95	
Internal/external locus	0.56	
Controllability	0.50	
Responsibility		
Purposefulness	0.85	
Motivation	0.57	
Blame	0.66	
Negative intent	0.58	
Causal with Responsibility	$r = .86$	

Feedback from teachers and the research team highlighted the need for two additional adaptations to the measure. First, missingness on the aggressive behavior scenario, with only 37 of 44 complete responses, indicated the need to change the prompt phrasing from teacher-focused aggression (e.g., “Think about a recent incident when this student was physically or verbally aggressive toward you”) to general aggression (e.g. “Think about a recent incident when this student was aggressive”) with the aim of increasing teacher responses. Second, to reduce the teacher burden and develop a tool feasible for use in applied settings, it was necessary to reduce

the time teachers spent filling out the measure. Thus, while teachers were still prompted to think of a specific situation with the focal student, I removed the qualitative responses from the measure.

Parent Studies and Participants

BEST in CLASS – Elementary (Parent Study A). BEST in CLASS (Conroy, Sutherland, Vo, Carr, & Ogston, 2014; Sutherland et al., 2018) is a Tier 2 intervention focused on increasing teachers' use and competent delivery of specified practices with preschool children at risk for EBD through practice-based coaching. Results of a randomized controlled trial (RCT) funded by the Institute of Education Sciences demonstrated increased positive teacher-child interactions, social skills, and child engagement as well as reduced externalizing behavior for identified children in early childhood settings. Similar outcomes were found in a small RCT of the intervention adapted for early elementary grades (K-3; BEST in CLASS – Elementary), prompting the principal investigators to replicate the intervention in a large, multisite RCT. Data for the present study came from the first year of the large RCT examining the effects of BEST in CLASS – Elementary.

To participate, teachers met the following criteria: (1) teach in general or special education Kindergarten, 1st, 2nd or 3rd grades, (2) give consent to participate, and (3) have at least one student meeting the following inclusion criteria: (a) demonstrates externalizing behaviors that the teacher identifies as interfering with participation in the classroom, (b) enrolled in grade K-3, (c) given parental or guardian consent to participate in the study. To identify focal student participants in each class, kindergarten teachers completed the first stage of the ESP (Feil, Walker, & Severson, 1995) and teachers of grades 1-3 completed the SSBD (Walker et al., 1994), which both require ranking students in the classroom on externalizing behaviors. Informed

consent was sought from the highest ranked students and, once obtained, stage two of the screening measure was administered. Students with at least one critical event indicating presence of an externalizing behavior problem (three items from the ESP; 11 items from the SSBD) noted by the teacher were included as participants in the study.

Participants: Parent study A. Parent Study A included 20 teachers and 35 screened focal students from two urban elementary schools in the Mid-Atlantic and one rural school in the Southeast (Table 6). The 35 student participants were in grades K-3 with a mean age of 7.1 years. Sixty percent were male, and a majority of students were either African American (45.7%) or Caucasian (34.3%). Though demographically different, over 75% of the students in all three schools received free or reduced lunch. All 20 teachers in Parent Study A were female and came from various racial and ethnic backgrounds: 25% African American, 60% Caucasian, 5% Asian, and 10% from two or more groups. Additionally, 20% of the teachers identified as Hispanic. The average career of the participating teachers was 7 years and just over half (55%) had master's degree.

Developmental Relations Between Language Ability and Behavior Problems (Parent Study B). Given the comorbidity of low language skills and behavioral deficits (Hollo, Wehby, & Oliver, 2014; Yew & O'Kearney, 2015), this study aims to evaluate the longitudinal associations between language ability and behavior problems in students, as well as the impact of language and behavioral deficits on academic achievement. While this longitudinal study will follow two cohorts of 100 children from the beginning of kindergarten to the end of first grade, only data from students in the first cohort were used in the present study.

Because the parent project explores language and behavior, students were identified as at-risk using two methods. The research team screened all kindergarteners using the screening tool

from the Clinical Evaluation of Language Fundamentals – 5th Edition (CELF-5; Wiig, Semel, & Secord, 2013) to identify students at-risk for language disorders while descriptions from the Social Skills Improvement System (SSIS; Gresham & Elliot, 2008) identified students at-risk for EBD. Due to the common co-occurrence of language and behavioral deficits and the diverse nature of the schools in the area, a subset of children met at-risk status on both screening measures. Though the larger sample for Parent Study B also includes students only at-risk for language disorders and typically developing peers, the present study includes only data from students identified as at-risk for EBD.

Participants: Parent study B. Parent Study B included a subsample of 21 teachers and 44 students from 4 suburban elementary schools in the Mid-Atlantic (Table 6). A majority of the 44 participating students were Caucasian (72.7%) and male (70.5%), with a mean age of 5.67 years. The schools in Parent Study B varied in demographics, however less than 55% of the students in all four schools received free or reduced lunch. Of the 21 teachers participating in Parent Study B, all were female, and the majority were Caucasian (81%), with two teachers identifying as Hispanic. Most of the teachers had a bachelor's degree (66.7%) and had been teaching for an average of 12.62 years.

Table 6

Participant Demographics

			Parent Study A	Parent Study B	Total
Teachers	*N* (%)		20 (100%)	21 (100%)	41 (100%)
	Race/Ethnicity	African American	5 (25.0%)	1 (4.75%)	6 (14.6%)
		Caucasian	12 (60.0%)	17 (81.0%)	29 (70.7%)
		Asian	1 (5.0%)	0	1 (2.44%)
		Two or More	2 (10.0%)	0	2 (4.88%)
		No Report	0	3 (14.3%)	3 (7.32%)
	Hispanic	Yes	4 (20.0%)	2 (9.5%)	6 (14.6%)
		No	16 (80.0%)	19 (90.5%)	35 (85.4%)
	Gender	Female	20 (100%)	21 (100%)	41 (100%)
		Male	0	0	0
		No Report	0	0	0
	Education	High School	0	0	0
		Associates	0	0	0
		Bachelors	8 (40.0%)	14 (66.7%)	22 (53.7%)
		Masters	11 (55.0%)	7 (33.33%)	18 (43.9%)
		Doctoral	0	0	0
		Other	1 (5.0%)	0	1 (2.44%)
		No Report	0	0	0
	Years Teaching	Mean	7	12.62	9.81
Students	*N* (%)		35 (100%)	44 (100%)	79 (100%)
	Race/Ethnicity	African American	16 (45.7%)	7 (15.9%)	23 (29.1%)
		Caucasian	12 (34.3%)	32 (72.7%)	44 (55.7%)
		Asian	0	0	0
		Two or More	0	2 (4.55%)	2 (2.53%)
		No Report	7 (20.0%)	3 (6.82%)	10 (12.7%)
	Hispanic	Yes	0	0	0
		No	35 (100%)	44 (100%)	79 (100%)
	Gender	Female	14 (40.0%)	11 (25.0%)	25 (31.6%)
		Male	21 (60.0%)	31 (70.5%)	52 (65.8%)
		No Report	0	2 (4.50%)	2 (2.53%)
	Age	Mean	7.1	5.67	6.38

Measures of Construct Validity

While both parent studies use a wide variety of measures to assess targeted outcomes and mediating variables, a selection of measures overlap with the specific aims of this study. Specifically, to support the construct validity of the TAM-EE, I hypothesized teacher attributions for challenging classroom behavior to correlate with observed classroom quality, teacher reports of challenging behavior, teacher self-efficacy, and teacher perceptions of the student-teacher relationship assessed with the following measures.

The **Classroom Atmosphere Rating Scale** (CARS; Wehby et al., 1993) is a 7-item observational questionnaire originally developed for use with Fast Track (Conduct Problems Prevention Research Group; CPRG) and which demonstrates good internal consistency (Cronbach's alphas ranging from .94-.95) and adequate inter-rater reliability (ICC = .55-.70). CARS observations were completed over four 15-mionute visits by trained school observers to obtain an overall rating of classroom atmosphere. Observers rated classroom factors such as compliance, cooperation, involvement, on-task behavior, and student support, on a scale from 1 ("*Very High"*) to 5 ("*Very Low"*). Raters for both parent studies attended the same CARS training and demonstrated adequate reliability prior to beginning live classroom observations. An aggregate subscale score was created for each teacher by generating a mean student support score from all observations.

The **Social Skills Improvement System Rating Scales** (SSIS; Gresham & Elliott, 2008) is a nationally normed measure with three domains that aims to evaluate the social skills, problem behaviors, and academic competence of young children. Test-retest reliability estimates demonstrate the Total Problem Behavior scores for teachers and students were .92 and .77, respectively. Overall, test-reliability estimates for the social skills and problem behavior

subscales were in the .80s with a median stability coefficient of around .84. An aggregate score for the problem behavior subscale was created for each teacher in Parent Study A from the mean of the problem behavior scores for participating focal students.

The **School Social Behavior Scale** (SSBS-2; Merrell, 2002) is a 2-page rating scale used to examine the behavior of students in grades K-12 with a specific focus on social competence and antisocial behavior. The measure's six subscales have an internal consistency ranging from .94 to .96 (.98 overall). Aggregate subscale scores were created for both the social competence and antisocial behavior subscales for each teacher in Study B based on the mean of scores from students in the sample.

The **Student Teacher Relationship Scale** (STRS; Pianta, 2001) is a teacher report measure consisting of 15 items and two subscales: closeness and conflict. Both factors demonstrate high levels of internal consistency with Cronbach's alphas of .86 and .93 for closeness and conflict, respectively. The measure is considered valid in predicting academic and social functioning for students in preschool and early elementary settings. Aggregate scores for both closeness and conflict were created for each teacher in both parent studies from the mean scores of participating focal students.

The **Teachers' Sense of Self-Efficacy Scale** (TSES; Tschannen-Moran & Hoy, 2001) is a self-report measure that includes three sub-scales to measure teacher efficacy related to student engagement, instructional strategies, and classroom management. In completing the measure, teachers choose from nine options ranging from "*nothing*" to "*a great deal*". The measure's subscales demonstrate high internal consistency with alpha levels ranging from .87 to .94. However, this study analyzed only the classroom management subscale collected from Parent Study A.

Analyses

After merging data from the parent studies, I conducted a series of CFAs using Stata IC 15 statistics software (StataCorp, 2017) to assess the reliability of the TAM-EE and determine whether the two-factor model established by the PTA (Carter et. al., 2014) adequately fit participants in grades K-3. Exploratory factor analysis was not necessary because both the PTA and TAM-EE closely followed the factor structure of the parent-report measure they were based on. With the goal of replicating the methods of Carter and colleagues (2014), I explored both one and two-factor models, with standardized estimates and measures used to determine goodness of fit along the following guidelines: RMSEA < .08, SRMR < .08, CFI > .90, and TLI > .95 (Hooper, Coughlan, & Mullen, 2008). Given that the dimension of controllability loaded onto both the *Causal* and *Responsibility* factors for the PTA, I did not include it in the analyses. This decision was made by Carter and colleagues based on the separate nature of controllability in Weiner's interpersonal attribution theory (1985, 2010).

I also estimated bivariate Pearson correlations to compare teacher *Causal* and *Responsibility* attributions from the TAM-EE with subscale ratings from the TSES (Tschannen-Moran & Hoy, 2001), STRS (Pianta, 2001), CARS (Wehby et al., 1993), SSBS-2 (Merrell, 2002), and SSIS (Gresham & Elliot, 2008) as an assessment of construct validity. Based on research from the literature on parent attributions and initial use of the PTA (Carter et al., 2014), I anticipated that *Causal* attributions would be significantly related to closeness reported through the STRS, with more negative attributions aligning with lower perceived closeness. In terms of teacher self-efficacy, I expected that greater teacher self-efficacy, measured by the classroom management subscale of the TSES, would be significantly related to more positive *Causal* attributions.

In assessing the *Responsibility* domain of the TAM-EE, I hypothesized that teachers reporting negative student behaviors, as measured with the SSIS (Gresham & Elliot, 2008) and SSBS-2 (Merrell, 2002), would also report more negative attributions. Similarly, I expected negative *Responsibility* attributions to be significantly related to more negative teacher-reported teacher-student relationship quality reported through the STRS (Pianta, 2001).

Chapter 4

Results

Descriptive Statistics

Descriptive statistics (Table 7) provided initial insight into the range of scores reported by teachers on the TAM-EE, which spanned the 6-point scale for all items. The absence of missing data signals changes made to the measure, which included new phrasing for the aggression prompt, may have clarified the behavior scenario resulting in increased teacher responses. Similar to the PTA (Carter et al., 2014), the TAM-EE scale with the lowest overall mean was Negative Intent (M = 1.86, SD = .89), which corresponds to the statement *"This student [was aggressive, interrupted, etc.] mainly to annoy me."* However, while Globality yielded the highest mean for the PTA, teachers in the current study reported the highest overall mean for Locus (M = 3.90, SD = 1.27), which is represented on the TAM-EE by the statement *"The student's behavior is due to something about them (i.e. the mood they were in)."*

Table 7

TAM-EE Means by Dimension and Behavior Scenario

Dimension	Noncompliance	Aggression	Emotion	Interruption	Overall
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Purposefulness	4.15 *(1.73)*	3.54 *(1.99)*	3.05 *(1.82)*	3.78 *(1.71)*	3.63 *(1.44)*
Globality	3.88 *(1.60)*	2.65 *(1.60)*	2.87 *(1.67)*	4.24 *(1.52)*	3.41 *(1.30)*
Stability	3.41 *(1.68)*	2.57 *(.165)*	2.71 *(1.56)*	3.59 *(1.63)*	3.22 *(1.35)*
Motivation	3.71 *(1.45)*	3.14 *(1.87)*	3.16 *(1.71)*	3.66 *(1.65)*	3.50 *(1.25)*
Locus	4.47 *(1.53)*	3.91 *(1.89)*	4.03 *(1.69)*	4.33 *(1.47)*	3.90 *(1.27)*
Blame	3.96 *(1.46)*	3.91 *(1.78)*	2.72 *(1.53)*	3.97 *(1.53)*	3.73 *(1.10)*
Negative intent	1.78 *(1.08)*	1.65 *(1.17)*	1.57 *(.83)*	1.84 *(1.19)*	1.86 *(.89)*
Controllability	4.10 *(1.53)*	4.03 *(1.64)*	3.70 *(1.48)*	3.89 *(1.41)*	3.71 *(1.08)*

Reliability

Following the same method as the PTA (Carter et al., 2014) and the TAM-EE pilot, I conducted a series of CFAs to evaluate the factor structure of the TAM-EE. First, I fit the set of four behavior scenarios (noncompliance, aggression, emotion dysregulation, interruption) and seven dimensions (purposefulness, globality, stability, motivation, locus, blame, negative intent) to a one-factor maximum likelihood mean-variance adjusted (MLMV) model with uncorrelated errors (Hooper et al., 2008). This model had adequate fit; RMSEA = .18; CFI =.90; TLI = .86; SRMR = .06 (scale loadings are detailed in Table 8).

Next, I fit the four behavior scenarios to a MLMV model with the two factors established by the PTA (Carter et al., 2014): *Causal* and *Responsibility*. The two-factor model demonstrated adequate fit; RMSEA =.13; CFI = .96; TLI =.93; SRMR =.05. As in the PTA, the two factors

were allowed to correlate freely, with a correlation between *Causal* and *Responsibility; r* = .88 (Figure 3).

Table 8

Confirmatory Factor Analysis Results for TAM-EE

Analysis	Two Factor	One Factor
RMSEA	.13	.18
CFI	.96	.90
TLI	.93	.86
SRMR	.05	.06
Scale loadings		
Attributions – one factor		
Purposefulness		.86
Globality		.88
Stability		.85
Motivation		.90
Locus		.70
Blame		.54
Negative intent		.63
Causal and Responsibility – two factor		
Causal		
Globality	.94	
Stability	.90	
Locus	.68	
Responsibility		
Purposefulness	.87	
Motivation	.94	
Blame	.57	
Negative intent	.65	
Causal with Responsibility	*r* = .88	

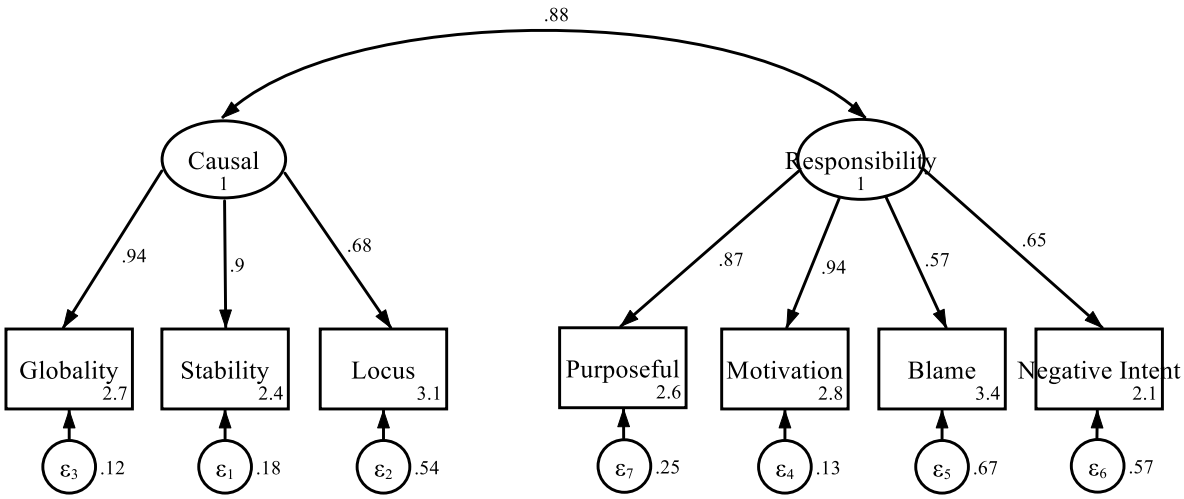

Figure 3. Visual path model of the final two-factor CFA for the TAM-EE

Given the results of the CFAs, I developed two composite subscales by averaging the dimensions aligned with the identified factors: *Causal* (globality, stability, locus) and *Responsibility* (purposefulness, motivation, blame, and negative intent). The two subscales were highly correlated (r = .79) and had a slightly greater range than the subscales of the PTA (Carter et al., 2014; Table 9). Cronbach's alpha coefficients were also calculated for the subscales, which demonstrated good internal consistency (α's = .97 and .84, for *Causal* and *Responsibility,* respectively*)*; these alphas were similar to those on the PTA.

Table 9

Descriptive Statistics for TAM-EE Subscales

Subscale	*n*	*M*	*SD*	Min.	Max.	Cronbach's α
Causal	79	3.51	1.16	1	6	.87
Responsibility	79	3.18	.98	1	5.31	.84

Validity

Bivariate correlations. To establish construct validity, I conducted bivariate Pearson correlations aimed at relating teacher's aggregate *Causal* and *Responsibility* attributions with their ratings on five measures (Table 10). Aggregate scores for student level measures (i.e., SSIS, Gresham & Elliot, 2008; SSBS-2, Merrell, 2002; STRS, Pianta, 2001) were created from means, following the method used by Carter and colleagues (2014) in assessing the PTA. The correlation between the composite TAM-EE subscales and teacher practices and perceptions was evaluated in the total sample ($N = 79$) for two measures (CARS, Wehby et al., 1993; STRS, Pianta, 2001), in Parent Study A ($N = 35$) for two measures (SSIS, Gresham & Elliot, 2008; TSES; Tschannen-Moran & Hoy, 2001) and in Parent Study B ($N = 44$) for one measure (SSBS-2; Merrell, 2002).

The *Causal* attribution subscale of the TAM-EE was significantly and positively correlated with teacher reports of student-teacher conflict from both parent studies; negative causal attributions were associated with higher teacher-reported conflict. Further, all teacher reports of student behavior were significantly and positively correlated with *Causal* attributions, including problem behavior ($r = .43$, SSIS; Gresham & Elliot, 2008), social competence ($r = .68$, and antisocial behavior ($r = .66$, SSBS-2; Merrell, 2002). Significant correlations were also present between the *Causal* attribution subscale and classroom quality in both parent studies ($r = .43$); more negative attributions were associated with increased classroom support. Finally, teacher's *Causal* attributions were not significantly correlated with teacher report of classroom management self-efficacy.

The *Responsibility* subscale was significantly and positively correlated with teacher reports of student-teacher conflict: more negative responsibility attributions correlated with higher teacher-reported conflict, $r = .48$. However, all other correlations with the *Responsibility*

subscale, including teacher-reported closeness, teacher reports of challenging behaviors, teacher reported self-efficacy, and observed classroom quality, were nonsignificant.

Partial correlations. Following analyses conducted by Carter and colleagues (2014), the correlation between the *Causal* and *Responsibility* subscales on the TAM-EE ($r = .79$) required further exploration. Thus, I repeated the construct validity process using partial correlations to explore the correlation of the *Causal* and *Responsibility* subscales with the related variables while also controlling for the other subscale (*Causal* or *Responsibility*). This resulted in a few significant changes, namely in the areas of classroom quality, problem behavior (SSIS; Gresham & Elliot, 2008), and teacher self-efficacy (TSES; Tschannen-Moran & Hoy, 2001). Specifically, when controlling for *Responsibility* attributions, the *Causal* attributions were no longer significantly correlated with classroom quality or teacher-reported problem behavior on the SSIS. Additionally, when controlling for *Causal* attributions, *Responsibility* attributions were no longer significantly correlated with teacher reports of teacher-student conflict.

Table 10

Bivariate and Partial Correlations – Associations between the Teacher Attribution Measure for Early Elementary (TAM-EE), Classroom Quality, Student Behavior, Student-Teacher Relationships, and Teaching Efficacy

	Causal bivariate	*Causal partial*	*Responsibility bivariate*	*Responsibility partial*
Classroom quality (CARS – Support)[a,b]	.43*	.17	.23	.19
Problem behavior (SSIS)[a]	.43*	.26	.39	.19
Social competence (SSBS-2)[b]	.68*	.73**	.19	-.40
Antisocial behavior (SSBS-2)[b]	.66*	.68*	.23	-.31
Student-teacher closeness (STRS)[a,b]	-.38	-.31	-.24	-.01
Student-teacher conflict (STRS)[a,b]	.75**	.65**	.48*	.07
Classroom management efficacy (TSES)[a]	.04	-.07	.16	.18

[a] data collected in Parent Study A. *p < .05. **p < .01.
[b] Data collected in Parent Study B.

Chapter 5

Discussion

The purpose of this study was the examine the reliability and validity of the TAM-EE, a measure adapted from the PTA (Carter et al., 2014) to assess the challenging behavior attributions of early elementary teachers. Like the PTA, the TAM-EE uses a series of student-specific behavior scenarios as prompts for teachers who then rate statements aligned with dimensions of attribution theory on a 6-point scale. By following the procedures used by Carter and colleagues, this study provides both an initial psychometric evaluation of the TAM-EE and additional support for the validity and reliability of the PTA.

Reliability

In line with both the hypothesis and the initial psychometric evaluation of the PTA (Carter et al., 2014), the two-factor model (*Causal* and *Responsibility*) fit better than the one-factor model for attributions. This suggests that each factor is unique and represents a different aspect of a teacher's attributions for challenging student behavior. For example, teachers with high *Causal* attributions tend to believe that challenging student behavior is due to something internal to the student and likely to be stable across both time and contexts. Teachers with high *Responsibility* attributions see challenging behavior as purposeful and selfishly motivated. They also tend to believe that students demonstrate challenging behavior with negative intentions and are to blame for their behavior.

However, given both the similar model fit and the strong correlation between *Causal* and *Responsibility* in the two-factor model ($r = .88$), these results should be approached with caution. This study aimed to replicate the methods used by Carter and colleagues (2014), including the removal of the controllability dimension, which loaded onto both the *Causal* and *Responsibility*

factors. Thus, it is possible, particularly given its importance in Weiner's attribution theory (1985), that controllability may be a factor of its own and the best fit for the PTA and TAM-EE is a three-factor model.

Additionally, in comparison to the high scale loadings of the other dimensions, blame stands out for its low loading onto the *Responsibility* factor (.57). It is possible that the prompt for the blame dimension ("*The student deserved to be disciplined for their behavior.*") does not effectively assess teacher perceptions of student responsibility, particularly given the ways in which discipline can vary by both teacher and school. In future versions of the measure, it may be best to use a prompt that specifically references the student being blamed or held responsible for their behavior.

Validity

Despite some unexpected results in both the bivariate and partial correlations, comparison of the results to both the hypotheses and the outcomes of the PTA validation (Carter et al., 2014) help to establish initial validity evidence for the TAM-EE and additional evidence for the PTA. This is particularly true for teacher perceptions of student-teacher relationships, which were assessed with the STRS (Pianta, 2001) in both parent studies. Given the findings of Carter and colleagues (2014) that *Causal* attributions were significantly associated with student-teacher closeness, I hypothesized that more negative *Causal* attributions would correlate with decreased teacher-child closeness. However, while the results of the current study found no significant correlations between *Causal* attributions and student-teacher closeness, it did identify a significant association between *Causal* attributions and student-teacher conflict. This finding falls in line with both the initial hypothesis of Carter and colleagues and research from the

parenting literature (e.g., Black et al., 2001). Further, the significant strength of this association held for both the bivariate and partial correlations.

There was also a significant association between classroom quality, measured with the support subscale of the CARS (Wehby et al., 1993) in both parent studies, and more negative *Causal* attributions. Though the significance did not hold in the partial correlation, it aligns with results from both Carter and colleagues (2014) and the parenting literature. This finding, which suggests an association between an observed negative student support and negative *Causal* attributions, is similar to studies that found parents with more negative behavior attributions may show more anger and insensitivity (Black et al., 2001; Coplan et al., 2002).

As hypothesized, there was a significant association between teachers' negative *Causal* attributions and reports of challenging behavior. This correlation held across the three subscales (i.e., problem behavior, social competence, aggressive behavior) of both measures used in this study (SSIS, Gresham & Elliot, 2008; SSBS-2, Merrell, 2002). While this aligns with results from the parenting literature, it is different from the PTA (Carter et al., 2014), which did not identify significant correlations between teachers' *Causal* attributions and reports of behavior. Carter and colleagues believe this unexpected result may be due to a lack of interactions between teachers and students with challenging behaviors, however, the chosen behavior measure (Sutter-Eyberg Student Behavior Inventory–Revised; Eyberg & Pincus, 1999) could also play a role.

Contrary to my hypothesis that higher self-efficacy would be correlated with more positive attributions for challenging student behavior, teacher self-efficacy in classroom management was not significantly associated with either *Causal* or *Responsibility* attributions. Though these results align with the findings of Carter and colleagues (2014) they are unexpected, particularly given the historical connection between early theories of locus of control (Rotter,

1966) and Bandura's social cognitive theory (1977). Still, it is possible that there is a distinction between a teacher's efficacy about teaching students and the attributions they have for student behavior (Carter et al., 2014). This may be particularly true for students with challenging behavior, as teachers may feel highly efficacious in managing their whole classroom but less positive about their ability to successfully support specific students (Zee, De Jong, & Koomen, 2017). Thus, it may be worth examining this association using a student-specific self-efficacy measure to examine the correlation between a teacher's attributions for an individual student's behavior and their self-efficacy in managing that student in their classroom.

Finally, there was a lack of significant correlations between the *Responsibility* subscale and related constructs, with the exception of student-teacher conflict. As Carter and colleagues (2014) highlighted, their findings of significant correlations across both the *Causal* and *Responsibility* subscales help provide evidence for the two-factor model. Though the difference in this study may be due to any number of factors, including measurement changes or sample size, it is worth noting.

Limitations

Several limitations should be accounted for when considering the results of this study. First, while efforts were made to include a diverse population of teachers and students, the small sample of 41 teachers and 79 students reduced the power of the analyses. There is some debate among statisticians over sample size requirements for CFAs, with numbers ranging from a minimum of 100 participants (Boomsma, 1982) to 10 cases per variable (Nunnally, 1967). However, recent studies suggest that two-factor models like the TAM-EE, with loadings of .65 and four indicators per factor, should aim for a minimum of 200 participants (Wolf et al., 2013). Thus, though the model presented in this study had adequate fit, it is considered under-powered.

Additionally, given the separate goals of the parent studies, data from Parent Study A was collected in January while data from Parent Study B was collected in May. Given the potential for teacher perceptions to change over the course of the school year, collection at parallel timepoints would be ideal.

There are also some limitations to the TAM-EE's use of real, teacher-identified incidents of challenging classroom behavior in measuring teacher attributions, despite the suggestion that they may be a better indicator of the construct than hypothetical vignettes (Jager & Denessen, 2015; Lucas et al., 2009). Specifically, by prompting teachers to recall a classroom incident that occurred in the past, the measure may be confounded by hindsight bias and, without the qualitative descriptions of student behavior, it is not possible to compare teacher constructions of "challenging behavior". Also, as noted by Wang and Hall (2018), the use of a self-report measure could lead to the inflation of findings to increase desirability and may warrant the consideration of additional methodologies.

Finally, this study was limited by its aim of replicating the methods used by Carter and colleagues (2014) to validate the PTA. Specifically, the decision to create aggregate scores for the student-level measures used to establish validity seems to contradict the goal of both the PTA and TAM-EE, which was to develop a student-specific teacher attribution measure. In the future, the use of multi-level modeling would help align the methods with the purpose of the study.

Future Research

While this study is a first step in examining the psychometric properties of the TAM-EE, additional research is needed to confirm the reliability and validity of the measure. Given the limitations, future studies should aim to replicate the present study with a larger sample size. More participants would allow for several improvements on the present study and also make the

examination other models (e.g., three-factor) possible. Replication with a larger, more diverse sample could also examine teacher attributions across different schools, grade levels, and teacher or student demographic characteristics.

Qualitative and mixed-methods studies may also help improve measures like the PTA and TAM-EE. Specifically, focus groups or individual teacher interviews could be used to clarify the meaning of both the behavior scenarios and question prompts with the goal of making the measure simple and unambiguous. Additionally, educator feedback may help determine the feasibility of using a 32-item measure like the PTA or TAM-EE in specific school settings.

In their review of teacher attribution measures, Wang and Hall (2018) note that few studies examine the impact of teacher attributions on student outcomes. Given the improved development of attribution measures like the PTA and TAM-EE, future research should empirically explore the links between teacher attributions for challenging student behavior and student outcomes; both behavioral and academic. These studies may also consider the addition of observational measures or real-time attribution recording to account for the limitations of self-report measures. Finally, with research suggesting a link between teacher attributions and their willingness to accept interventions (Poulou & Norwich, 2002), it may be worth examining teacher attributions as a moderator of treatment effects.

Implications for Policy and Practice

The use of standardized attribution measures has the potential to improve teacher practice across the profession, from preservice to veteran teachers. First, given knowledge that conceptualizations of challenging behavior may be established before teachers enter the profession (McMahon, 2013), it is important for the role of attributions to be considered in preservice training programs. However, as those established conceptualizations tend to change

over the course of a career, it is vital that teachers regularly revisit their perceptions of student behavior. This is particularly important given the contribution of attributions to student-teacher relationships and long-term student outcomes (e.g., achievement, disciplinary infractions, mental health risk).

One way for teachers to re-examine their attributions and biases is through interventions, for example; interventions that address teachers' interpersonal attributions for student behavior or their intrapersonal attributions for related teaching practice. Some of this work has already been done in the area of Attributional Retraining (AR), which is an intervention commonly used to redirect the causal attributions of student failure (Wang & Hall, 2018). Once identified by future research, specific variables related to shifts in teacher attributions for challenging student behavior can be targeted.

The intrapersonal attributions made by teachers may also play an important role in teacher motivation and well-being (Wang & Hall, 2018). Thus, it is possible for attribution-based interventions or retraining to help improve teacher well-being in addition to teacher practice and teacher-student relationships. In settings without formal interventions, Thijs and Koomen (2009) see school psychologists as a as a vehicle for delivering attribution-based information to teachers. Specifically, through the use of attribution measures, school psychologists could help make teachers aware of their own attributional biases.

Conclusion

This study aimed to contribute to the literature on the measurement of teacher attributions for challenging student behavior through the adaptation of an existing attribution measure and evaluation of its psychometric properties. Despite a small sample, results provide initial support for the reliability of the TAM-EE, which fits the same two-factor structure as the measure it was

adapted from. Results of bivariate and partial correlations suggest that the TAM-EE's *Causal* subscale is associated with similar teacher beliefs and provides initial evidence for the measure's validity. Additionally, given the similar structure of the TAM-EE and the PTA (Carter et al., 2014), which it was adapted from, this study helps to confirm the reliability and validity of the source measure. Though future research with larger samples is needed to fully validate the psychometric properties of the TAM-EE, this study is an important step in the development of improved attribution measures and, eventually, toward the use of teacher attribution data in improving teacher practices and student outcomes.

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Appendix A

Preschool Teaching Attributions Measure

Preparatory Questions

Question
The age and sex of the child _____
What happened _____
What you did _____
And why you think the child didn't do what you asked _____

Behavior Scenarios

Type of Misbehavior	Scenario
Noncompliance to teacher requests	Think about a time recently when a child in your classroom didn't do something you wanted done (such as picking up toys at the end of an activity, staying in line during hand washing, etc.), even after you asked several times.
Aggression towards peers	Think about a time recently when a child in your classroom hit, pushed, yelled at, or otherwise behaved aggressively with another child.
Aggression towards teacher	Think of a time recently when a child in your classroom was disrespectful of you (talked back to you, lashed out physically as if to hit or kick you, etc.).
Interruption	Think about a time recently when a child in your classroom interrupted you and demanded your attention when you were busy with something else (talking on the phone, speaking with another child's parent, working on a project with other children, etc.).
Noncompliance with routine	Think of a time recently when a child in your classroom refused to go along with a daily routine (settling down to eat lunch, getting ready to go outside, lying quietly at rest time, etc.).

Sample Items for Scenario 1

Dimension	Item
Purposefulness	The child didn't do what I asked on purpose rather than unintentionally
Globality	The reason the child didn't do what I asked is something that comes up often with this child
Stability	The reason the child didn't do what I asked is not likely to change
Motivation	The child didn't do what I asked because he or she is motivated by selfish rather than unselfish concerns
Internal/external locus	The child's behavior (in not doing what I asked) is due to something about him or her (for example, the mood he or she was in, his or her personality)
Blame	The child deserved to be disciplined for not doing what I asked
Negative intent	The child didn't do what I asked mainly just to annoy me
Controllability	The child was able to control whether or not he or she didn't do what I asked

Appendix B

Teacher Attribution Measure for Early Elementary (TAM-EE)

For questions 1-8 please indicate the degree to which you agree with each of the following statements based on the following situation:

Think about a recent incident when this student was noncompliant (i.e., not picking up at the end of an activity, not staying in their seat, not waiting in line), even after several requests.

1. The student was noncompliant on purpose.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
2. The student is similarly noncompliant throughout the school day.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
3. The student's noncompliance is not likely to change.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
4. The student is noncompliant because they are motivated by selfish concerns.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
5. The student's noncompliance is due to something about them (i.e., the mood they were in or their personality).	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
6. The student deserved to be disciplined for their noncompliance.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
7. The student was noncompliant mainly to annoy me.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
8. The student is able to control whether or not they comply with directions.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥

For questions 9-16 please indicate the degree to which you agree with each of the following statements based on the following situation:

Think about a recent incident when this student was aggressive (i.e., yelled or cursed, lashed out physically).

9. The student was aggressive on purpose.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
10. The student is similarly aggressive throughout the school day.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
11. The student's aggression is not likely to change.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
12. The student is aggressive because they are motivated by selfish concerns.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
13. The student's aggressive behavior is due to something about them (i.e., the mood they were in or their personality).	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
14. The student deserved to be disciplined for acting aggressively.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
15. The student was aggressive mainly to annoy me.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**
16. The student is able to control whether or not they act aggressively.	**Strongly Disagree** ①	②	③	④	⑤	⑥ **Strongly Agree**

For questions 17-24 please indicate the degree to which you agree with each of the following statements based on the following situation:

Think about a recent incident when this student expressed inappropriate feelings in a normal situation (i.e., excessive crying, extreme fear, tantrums, poor coping skills, etc. not expected given the environment).

17. The student expressed inappropriate feelings on purpose.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
18. The student expresses inappropriate feelings throughout the school day.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
19. The student's inappropriate feelings are not likely to change.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
20. The student expressed inappropriate feelings because they are motivated by selfish concerns.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
21. The student's inappropriate feelings are due to something about them (for example, the mood they were in or their personality).	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
22. The student deserved to be disciplined for expressing inappropriate feelings.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
23. The student expressed inappropriate feelings mainly to annoy me.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
24. The student is able to control whether or not they express inappropriate feelings.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥

For questions 25-32 please indicate the degree to which you agree with each of the following statements based on the following situation:

Think about a recent incident when this student interrupted class activities (i.e., created a disturbance, bothered other students, talked out of turn).

25. The student interrupted the class activity on purpose.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
26. The student similarly interrupts class activities throughout the school day.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
27. The student's interruptions are not likely to change.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
28. The student interrupted class activities because they are motivated by selfish concerns.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
29. The student's behavior (interrupting class activities) is due to something about them (for example, the mood they were in or their personality).	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
30. The student deserved to be disciplined for interrupting class activities.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
31. The student interrupted class activities mainly to annoy me.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥
32. The student is able to control whether or not they interrupt class activities.	**Strongly Disagree** ①	②	③	④	⑤	**Strongly Agree** ⑥