Examining teachers' classroom management profiles: Incorporating a focus on culturally responsive practice☆

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ABSTRACT

Effective classroom management practices have been associated with students' behavioral and academic outcomes, but some questions have been raised regarding the degree to which current classroom management strategies are responsive to the backgrounds of students of color in US public schools. Additionally, frameworks for culturally responsive classroom management have emerged, but little attention has been given to systematically measuring and examining these practices, particularly in conjunction with more traditional domains of classroom management. The current study used a person-centered approach with data from 103 middle-school teachers to explore how classroom management practices, including cultural responsiveness, co-occur in teacher practice, and how profiles of practices are associated with teacher and classroom characteristics and student behaviors. The latent profile analysis revealed three ordered profiles of classroom management practices (i.e., high, medium, low), suggesting that cultural responsiveness may operate as an extension of other classroom management strategies. Results also demonstrated that White students were more likely to be in classrooms with high levels of classroom management, and that students in classrooms with low levels of classroom management were more likely to demonstrate elevated levels of negative behaviors. The results suggest that a subset of teachers is in need of comprehensive professional development on a range of classroom management techniques, while all teachers could improve their practices reflecting meaningful participation and cultural responsiveness.

1. Introduction

Classroom management practices capture the variety of strategies teachers use on a daily basis to build a positive classroom environment that is structured, engaging, and productive, and encourages student learning and growth. These practices include establishing expectations, monitoring student behavior, and anticipating and reacting to student needs (Pas, Cash, O'Brennan, Debnam, & Bradshaw, 2015). Effective classroom management techniques have been associated with student achievement,

productivity and accuracy in student work, decreases in off-task and disruptive behavior, higher levels of classroom engagement and attention, and more prosocial behavior and positive peer relationships among students (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008).

Despite evidence regarding the importance of classroom management more broadly (see Simonsen et al., 2008), concerns have surfaced regarding the degree to which classroom management techniques are responsive to the cultural backgrounds of students of color in the United States (Bal, 2018; Larson, Pas, Bradshaw, Rosenberg, & Day-Vines, 2018; Weinstein, Tomlinson-Clarke, & Curran, 2004). These concerns stem from the disproportionate representation of students of color in disciplinary actions, such as office referrals, suspensions, and expulsions, as compared to their White peers (Losen, Hodson, Keith III, Morrison, & Belway, 2015; Skiba et al., 2011; Skiba, Michael, Nardo, & Peterson, 2002), even in schools and classrooms where teachers are implementing high-quality classroom management techniques, like positive behavior support (Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Vincent & Tobin, 2011). It has been hypothesized that incorporating an explicit focus on equity, inclusion, and cultural responsiveness into teachers' classroom management techniques may be more effective in promoting academic and behavioral functioning for students of color, and in turn, reduce disproportionality. Although multiple theoretical models have been proposed which outline principles and best practices of culturally responsive classroom management (e.g., Vincent, Randall, Cartledge, Tobin, & Swain-Bradway, 2011), little is known about how teachers may use culturally responsive classroom management practices in conjunction with other established domains of classroom management, and how these practices may jointly impact student behavioral outcomes in the classroom. In the current paper, we utilized a person-centered approach to identify profiles of teachers according to their classroom management practices, including both traditional and culturally responsive domains of classroom management; we in turn then examined associations between these profiles with student classroom behaviors and teacher and classroom characteristics.

1.1. Effective classroom management

Teachers who engage in effective classroom management practices utilize a range of strategies to increase appropriate behavior and decrease inappropriate behavior which vary based on the complexity and severity of the behavior (Rusby, Crowley, Sprague, & Biglan, 2011; Simonsen et al., 2008). Such strategies include maximizing structure, establishing and reinforcing expectations, engaging students, and acknowledging appropriate and responding to inappropriate behaviors (Colvin, Flannery, Sugai, & Monegan, 2009; Emmer & Stough, 2001; Garwood, Harris, & Tomick, 2017; Moore Partin, Robertson, Maggin, Oliver, & Wehby, 2010). Although classroom management strategies differ from pedagogical techniques, classroom management and academic instruction are inherently linked. Effective instructional strategies facilitate classroom engagement and desirable student behavior; the need for reactive classroom management is reduced as instructional quality increases (Gay, 2006). Classroom management does not only include discouraging behavioral disruptions, but also preparing and facilitating active learning experiences that are engaging, comfortable, and inclusive for a wide variety of students (Gay, 2006). The importance of effective classroom management for mitigating behavioral problems in the classroom has been well established (Simonsen et al., 2008). Numerous experimental studies have demonstrated that interventions designed to improve teachers' use of effective classroom management practices have led to improvement in student behavior (see Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016 for a meta-analytic review). By contrast, the literature on *culturally responsive classroom management,* an important and necessary component of effective classroom behavior management as it relates to engaging students, has been more limited and situated within a separate area of scholarship focused on culturally responsive teaching and pedagogy (Gay, 2010; Ladson-Billings, 2000).

1.2. Culturally responsive classroom management

Culturally responsive classroom management focuses on how teachers establish and enforce expectations in an equitable manner, communicate with students in culturally consistent ways, accommodate and incorporate students' cultural and familial backgrounds, and encourage engagement and participation through building close, caring, and personal relationships (Bal, 2018; Brown, 2004; Vincent et al., 2011; Weinstein et al., 2004; Weinstein, Curran, & Tomlinson-Clarke, 2003). Such approaches to classroom management reflect sociocultural participation-centered techniques (Hickey & Schafer, 2011), which require teachers to take the perspectives, backgrounds, and identities of their students into consideration to enhance collective participation and build an authentic learning environment. Although being responsive to students' perspectives and identities is important for students of all racial and ethnic backgrounds, the central aim of culturally responsive practices is to enhance the learning experience for students of color, especially those from marginalized racial backgrounds, in order to address racial and social injustices in the education system (Gay, 2010; Ladson-Billings, 1995; Young, 2010). The values and expectations of the current education system tend to reflect the cultural norms of White individuals and families. Thus, the need for practices that are particularly responsive to the backgrounds of non-White students, above and beyond generally effective classroom management, is apparent. By affirming the personal identity, dignity, and cultural wealth of students of color throughout instruction, classroom routines, and behavioral management, culturally responsive classroom management strategies facilitate an inclusive, engaging, and equitable learning environment, where few behavioral problems and tensions arise (Gay, 2006).

Despite the development of theoretical frameworks outlining culturally responsive classroom management practices, very little empirical research has examined the effectiveness of these practices nor interventions to increase teachers' use of them. The extant research on culturally responsive classroom management is based largely on small-scale, descriptive research studies, most of which have used qualitative methodology (e.g., Brown, 2004; Kraft, 2007; Moll, Amanti, Neff, & Gonzalez, 1992). For example, a case study conducted in an urban middle school classroom with a high number of African American students demonstrated how the teacher's use

of cultural humor and culturally congruent demonstrations of affect and emotion was related to her ability to monitor classroom behaviors, establish control, encourage participation, and contribute to a safe and productive learning environment (Monroe & Obidah, 2004). In addition, a series of school-wide case study evaluations has examined the development and testing of a comprehensive family engagement model for the culturally-responsive adaptation of school-wide Positive Behavioral Interventions and Supports (referred to as CR-PBIS; Bal, 2016; Bal, Kozleski, Schrader, Rodriguez, & Pelton, 2014; Bal, Schrader, Afacan, & Mawene, 2016). A recent quantitative study, which utilized the same observational measure as the current study but in a different sample including both elementary and middle school teachers, found that teachers' use of culturally responsive practices was associated with positive student behavior in the classroom, above and beyond the use of proactive behavior management techniques (Larson et al., 2018). More research is, however, needed to systematically document and measure these practices and establish their effects on student outcomes.

A few studies have examined cultural responsiveness in relation to other domains of classroom management. For example, cultural responsiveness has been found to be associated with the emotional, but not instructional, climate of the classroom (Sanders & Downer, 2012). Furthermore, observed levels of cultural responsiveness were associated with teachers' proactive behavior expectations, reactive behavior management, and ability to actively engage their students through participation in classroom processes (Debnam, Pas, Bottiani, Cash, & Bradshaw, 2015). In this study, self-reported culturally-responsive teaching self-efficacy was associated positively with disapproval in the classroom and negatively associated with teacher control. Although these studies provide some insight regarding the relations among various domains of classroom management, they do not explore how cultural responsiveness, in conjunction with more traditional domains of classroom management, may affect student classroom behaviors. Various classroom management practices, including establishing structure, actively engaging students in instruction, and instating and reinforcing consistent expectations, also have been associated with positive student behaviors (Rusby et al., 2011; Simonsen et al., 2008); therefore, it is possible that the student behaviors differ in classrooms where teachers display similar levels of traditional classroom management quality, but vary in their use of cultural responsiveness. Together, this emerging body of empirical research suggests that it may be important to further investigate cultural responsiveness in relation to other domains of effective classroom behavior management and students' classroom behavior.

1.3. Teacher and Classroom Correlates of Classroom Management Practices

A number of teacher and classroom characteristics have been identified as potential predictors of management practices, and thus may also be predictive of the use of culturally-responsive practices as well. For example, teacher race and years of experience and classroom racial composition have been linked with teachers' classroom management practices (Larson & Bradshaw, 2017; Skiba & Knesting, 2001). Although there is no evidence, to our knowledge, to suggest that teachers' race is associated with their use of more traditional classroom management techniques, race is likely related to the use of culturally responsive practices. In fact, research suggests that teachers of color are more likely to report higher use of culturally responsive practices and be perceived as experts on addressing issues of culture and race within their school (Larson & Bradshaw, 2017; Thomas & Warren, 2017). Moreover, White teachers tend to receive less socialization regarding the implications of race and racial biases in education and society than teachers of color, who may have experienced inequality or barriers in their own schooling. In contrast, teachers of color may be more adept at understanding students' linguistic and cultural codes, as well as the barriers and challenges that students face (García & Guerra, 2004; Nieto, 1999; Saffold & Longwell-Grice, 2008; Sleeter, 2001; Villegas & Irvine, 2010). As such, one might predict that teachers of color would be more likely to engage in more culturally responsive classroom management practices, irrespective of their use of other classroom management strategies.

The racial composition of students within the classroom may also play a role in teachers' classroom management practices. Schools and classrooms with high proportions of students of color are more likely to have inexperienced and lower quality teachers (Darling-Hammond, 2000, 2010; Peske & Haycock, 2006) and are more likely to employ punitive behavior management techniques (Skiba & Knesting, 2001). This, in turn, suggests that teachers utilizing ineffective classroom management practices might be positioned within classrooms with higher numbers of non-White students. Alternatively, in classrooms with more students of color, teachers may be more likely to incorporate their students' socio-cultural backgrounds into instruction and utilize more culturally responsive classroom management practices (Ladson-Billings, 1994; Reyes, Scribner, & Paredes Scribner, 1999; Weinstein et al., 2004).

Finally, teacher years of experience has been linked to, and is often used as a proxy for, teacher quality. Research suggests that teachers with more experience tend to engage in higher quality classroom management practices (Harris & Sass, 2011; Wenglinsky, 2000); however, research examining whether years of experience is related to the use of culturally responsive practices has been mixed (see Larson & Bradshaw, 2017 for a review). Understanding how such teacher characteristics relate to their use of culturally responsive and other classroom management practices may help identify teachers who may be in need of professional development related to classroom management and culturally responsive practices.

1.4. Overview of the present study

The primary aim of the current study was to examine how teachers' classroom management practices, including control, anticipation and responsiveness, monitoring, proactive behavior management, meaningful participation, and cultural responsiveness co-occur in middle school classrooms. This study was conducted in middle school, as early adolescents' school-related motivation and overall engagement begin to decline during this time (Eccles, Lord, & Midgley, 1991). Relatedly, the rates of office referrals and

suspensions, as well as the overrepresentation of students of color in disciplinary decisions, tend to peak during middle school, as schools adopt more punitive disciplinary consequences (Clark, Dogan, & Akbar, 2003; Skiba et al., 2002). These developmental trends highlight the need to focus efforts on examining and enhancing classroom management practices in middle school classrooms.

Because teachers do not implement classroom management strategies in isolation, it is important to consider the various patterns of strategies that teachers use in conjunction with one another, including their use of culturally responsive practices. Person-centered approaches, like latent profile analysis (LPA; Hagenaars & McCutcheon, 2002), are potentially informative statistical techniques that allow for the identification of groups of teachers who display a similar pattern of strategies across multiple dimensions of instruction. Such empirical approaches can facilitate the tailoring of professional development that targets specific teacher needs across multiple domains of practice (Halpin & Kieffer, 2015). Moreover, we examined this aim by leveraging observational data regarding teachers' classroom management practices, as these data allowed for systematic measurement of practices across classrooms and schools and circumnavigate concerns with social desirability, which may be particularly problematic when studying sensitive topics such as culture and bias (Larson & Bradshaw, 2017). Considering the limited knowledge regarding the relations among teaching practices, particularly regarding cultural responsiveness, this LPA was primarily exploratory. Although one might expect that teachers who use effective classroom management techniques would also demonstrate cultural responsiveness, it is possible that cultural responsiveness operates somewhat independently. Specifically, teachers who are effective in traditional domains of classroom management (e.g., establishing control, monitoring) may nonetheless neglect to incorporate culturally responsive techniques, and vice versa.

A secondary research aim explored whether teacher factors (i.e., race, years of experience) and classroom characteristics (i.e., proportion of White students), which have been related to both classroom management and culturally responsive teacher practices, predicted membership of the various profiles of teacher practices. These analyses were also primarily exploratory and dependent on the profiles that emerged in the LPA. Broadly, we expected that teachers with more years of experience would be categorized into profiles defined by higher levels of general classroom management practices, and that teachers of color and classrooms with more students of color would be categorized into profiles defined by higher levels of culturally responsive teaching practices. The current study utilized the same observational measures of culturally responsive teaching practices as in the aforementioned studies (i.e., Debnam et al., 2015; Larson et al., 2018), but in a different sample including more teachers of color and schools with higher proportions of non-White students.

A tertiary aim was to examine whether the average level of negative student classroom behaviors differed across the classroom management profiles. We expected that students in classrooms with teachers who demonstrate high frequency of classroom management practices would demonstrate fewer negative behaviors, and this association may be especially strong for teachers who engaged in culturally responsive practices in addition to their high use of other management practices (Larson et al., 2018). Together, this line of research both expands the research on classroom management, which often excludes cultural considerations, and advances as the research on cultural responsiveness, which has rarely included systematic observations of these practices (Debnam et al., 2015).

2. Method

2.1. Participants

Data came from 103 teachers at nine middle schools in one Maryland school district (see Table 1 for demographic information), collected in Fall 2015. Teachers were part of a larger study examining the impact of a cultural proficiency professional development intervention, called Double Check. The goal of Double Check is to reduce disproportionality of students of color in disciplinary actions and improve student engagement (Bottiani et al., 2012; Bradshaw et al., 2018; Debnam, Bottiani, & Bradshaw, 2017; Hershfeldt et al., 2009). The current study used baseline data collected before teachers were assigned to control or treatment groups or received the professional development intervention.

Table 1
Teacher demographics, $n = 103$.

Teacher characteristics	N (%)
Female	64 (62.1%)
Race/ethnicity	
Black/African American	47 (56%)
White/Caucasian	23 (27.4%)
Asian/Pacific Islander	7 (8.3%)
Other race/ethnicity	7 (8.3%)
Hispanic	0 (0%)
Native American	0 (0%)
Years of teaching experience	
1st year	6 (7.1%)
1–3 years	14 (16.7%)
4–8 years	17 (20.2%)
9 or more years	47 (56%)

2.2. Procedure

Middle schools were approached for participation by the school district; the schools' principals were provided information on the details of the project and voluntarily consented to participation. Teachers were approached by project staff and volunteered for participation in the project. They then provided written consent, consistent with the researchers' university Institutional Review Board approved procedures. The consent rate for teachers was 76.76%. Immediately following consent, teachers completed a set of self-reported measures of teaching experiences (i.e., years of experience) and personal demographic characteristics (i.e., race) through a confidential online data system. Concurrently, classroom observations were conducted using both global ratings and event-based tallies from the Assessing School Settings: Interactions of Students and Teachers (ASSIST; Rusby et al., 2011; Rusby, Taylor, & Milchak, 2001) observational measure. Teachers were observed three times within a two-day period (including at least one morning and one afternoon observation) in the fall of the school year. One trained observer conducted each observation. During each of the three observation cycles, the observer oriented themselves to the classroom for 3 minutes, tallied student and teacher behaviors for the subsequent 15-minutes, and then left the classroom to immediately complete global ratings of teacher and student behaviors and interactions. Prior to data collection, all data collectors participated in a didactic training using a coding manual, videos and vignettes, followed by in-school practice observations with multiple expert coders. Thereafter, reliability was assessed by the degree to which trainees' codes matched the expert coders' codes for the classroom (i.e., inter-observer agreement). Observers were expected to achieve an 80% inter-observer agreement across three practice observations to be considered reliable. After achieving 80% agreement, observers coded independently in each classroom. The average reliability for fall 2015 data collection was 88%. Re-calibration was completed at the mid-way point through the data collection period (approximately 4 weeks later). For recalibration, observers had to code three videos online as if it were a live observation. If observers did not calibrate at 80% or above for the three online observations, a master trainer accompanied the observer to their next school to conduct in-person recalibration until the trainee calibrated to 80% or higher. For fall 2015 data collection recalibration, reliability averaged 85%. Prior reliability analyses of the ASSIST further indicate high reliability among observers, as a very low proportion of the variance (< 1%) in the classroom codes was attributable to the independent raters (Abry, Cash, & Bradshaw, 2014).

2.3. Measures

2.3.1. Teacher classroom management practices

Teacher classroom management practices were captured using global ratings of the ASSIST observational measure (Rusby et al., 2011, 2001). The global rating items were scored on a 5-point Likert-type scale, from 0 (*never*) to 4 (*almost continuously/often occurred*). The global ratings measured the following six dimensions of teaching classroom management practices: *teacher control of the classroom* (five items, α = 0.89, e.g., "There is evidence of classroom routines – students know what they're supposed to be doing"), *teacher anticipation and responsiveness* (six items, α = 0.89, e.g., "Teacher is responsive to students' behavioral and/or academic needs."), *teacher monitoring* (four items, α = 0.94, e.g., "Teacher scans the room and is aware of what is occurring."), *teacher proactive behavior management* (four items, α = 0.80, e.g., "Teacher is consistent, even-handed, and firm when necessary"), *teacher and student meaningful participation* (nine items, α = 0.88, e.g., "Teacher encourages students to share their ideas and opinions."), and *cultural responsiveness* (seven items, α = 0.79, e.g., "Teacher integrates cultural artifacts reflective of students' interests into learning activities).

The cultural responsiveness dimension was developed specifically for use with the Double Check intervention and was not part of the original ASSIST measure. This scale was developed following a literature review of culturally responsive best practices conducted by the study team. The goal of this measurement development process was to identify concrete practices that educators can use to minimize social hierarchies and enhance equity in the classroom, by incorporating students' perspectives, funds of knowledge (Moll et al., 1992), and cultural wealth (Yosso, 2005) into the classroom. The practices in this measure reflect both general strategies for incorporating students' backgrounds, voices, and experiences into classroom practices, as well as some specific strategies that have been identified to be particularly responsive for marginalized urban students of color. Once the items were developed, the measure was reviewed for content validity by an expert cultural advisory panel comprised of nationally recognized researchers, local school personnel, and other community stakeholders such as parents and activists. The scale captured the following seven practices: connecting lessons to real-world examples, personal story telling or sharing, using positive humor to engage students or defuse problems, incorporating cultural artifacts, employing rhythmic or call-and-response strategies, giving direct commands, and providing students opportunities to co-teach learning activities. Prior psychometric research on multiple study samples supports the internal and predictive validity of the ASSIST domains (Debnam et al., 2015; Pas et al., 2015). Previous studies have found significant associations between the ASSIST classroom management domains, including cultural responsiveness, and student outcomes, such as non-compliance, verbal or physical aggression, dangerous behavior, and student cooperation (Larson et al., 2018; Rusby et al., 2011).

Ratings on each item were averaged over the three observation time points, and then the ratings for each item within a subscale were averaged to create a single score for each dimension of teacher practices. Intraclass correlations (ICC) on the six dimensions across the three ASSIST observations ranged from 0.72 to 0.81, with an average of 0.75, indicating relatively little variability across the three cycles (Cicchetti, 1994). Higher scores reflected higher levels of each practice.

2.3.2. Student behaviors

Student behaviors were captured using ASSIST event-based tallies (Rusby et al., 2011, 2001) and included non-compliance, disruptions, verbal aggression, physical aggression, and profanity. During each 15-minute observation cycle, a trained data collector

counted the number of times each focal behavior occurred. Each incident could only count for one behavioral tally (e.g., profanity or verbal aggression). The tallies for all the behaviors were averaged over the three observation time points to create a single score for each behavior. Higher scores reflected more incidents of each behavior. Previous work measuring negative student behaviors using the ASSIST have found associations between profiles of classroom behavior (non-compliance, consistently meets expectations, in-consistently meets expectations) and classroom management techniques (Pas et al., 2015).

2.3.3. Classroom characteristics

The observers also recorded classroom characteristics, including the number of students and racial composition of the classroom (i.e., number of White students). The percentage of White students in the classroom was created by dividing the number of White students in the classroom by the number of total students in the classroom at each time point and then averaging the percentages over the three ASSIST cycles. The between school ICC for percentage White was 0.33, indicating that a considerable amount of variability in classroom composition occurred at the school level. Additionally, the average percentage of White students for ASSIST observed classrooms within a school reflected school-level demographic data according to public records. Specifically, the percentage of White students observed in classrooms in our study was within 2.5 percentage points of the percentage of White students publically reported for the corresponding school. Additionally, classrooms with the lowest observed percentages of White students were in schools with the lowest percentages of White students according to public records.

2.3.4. Teacher characteristics

Teachers self-reported on their race, which was collapsed into three categories: Black/African American ($n = 47$), White ($n = 23$), and Other ($n = 14$). Teachers also reported on their years of teaching experience on an ordinal scale (coded 1 = 1st year, 2 = 1–3 years, 3 = 4–8 years, 4 = 9 or more years).

2.4. Analyses

To explore profiles of teaching practices, with the specific goal of understanding how cultural responsiveness co-occurs with other classroom management practices, we used latent profile analysis (LPA; Hagenaars & McCutcheon, 2002; Muthén & Muthén, 2017) to identify the optimal number of teaching practice profiles. LPA is an approach used to identify non-observable profiles of individuals based on similar patterns of responses across multiple, observed, continuous indicators. We conducted the current LPA using the Maximum Likelihood Robust estimator in Mplus 8.1.5, which is robust to multivariate non-normality that may exist in the data (Muthén & Muthén, 2017). We began with a one-profile model and built the models iteratively, adding one profile at a time. In order to enumerate the appropriate number of latent profiles, we examined a number of fit statistics, including the AIC, BIC, adjusted BIC, LMR, and Vuong-LMR. The AIC and BIC considers model fit, sample size, and number of model parameters, and the model with the lowest AIC and BIC is considered to have the most optimal fit. The VLMR-LRT, LMR-LRT, and BRLT allow for nested model comparison utilizing chi-square difference testing, with a significant p-value suggesting that a given solution has significantly better fit than the solution with one fewer profiles (Nylund, Asparouhov, & Muthén, 2007). It is possible that the various fit indices conflict and suggest different model solutions during the model comparisons; therefore, it is important to also consider the theoretical and conceptual rationale for each solution, in addition to fit statistics, with preference for the most parsimonious, conceptually-sound model solution (Asparouhov & Muthén, 2014; Nylund et al., 2007).

We accounted for the nested structure of the data within schools by including school membership as fixed effects (i.e., dummy codes) in the model. This has been shown to be the optimal way to control for Level 2 variance with a small number of clusters (McNeish & Stapleton, 2016). This was necessary as the proportion of variance explained at the school-level for the six classroom management techniques ranged from 5.9% (cultural responsiveness) to 27.5% (anticipation & responsiveness). We had complete data for five of the six indicators (i.e., control, monitoring, proactive behavior management, meaningful participation, cultural responsiveness); only eight participants (7.77%) were missing data for the anticipation and responsiveness indicator. To handle missingness, Mplus employs Full Information Maximum Likelihood to utilize all available data without excluding cases. This approach minimizes bias in parameter estimates but retains the original sample size (Enders, 2010).

Once the LPA model was finalized, we utilized the 3-step method (R3STEP; Asparouhov & Muthén, 2013; Vermunt, 2010) to understand whether teacher and classroom characteristics (i.e., teacher race, teacher years of experience, classroom racial composition) were associated with group membership. The R3STEP method estimates the latent profiles (Step 1) and then creates a most likely profile variable; this was a nominal variable that represented which of the LPA profiles the individual had the highest probability of belonging (Step 2). Specifically, this was determined using the posterior distribution obtained during the estimation of the LPA. Step 3 then utilized multinomial regression to explore which teacher and classroom characteristics are significant predictors of latent profile measurement. The R3STEP method has many advantages over other methods of assigning individuals to their most likely group and conducting standard multinomial logistic regression, as it is able to account for measurement error in the most likely profile variable. Unfortunately, R3STEP is limited in its ability to handle missing data, resulting in list-wise deletion of any cases with missing data. In the case of this study, 19 teachers (18.4%) were missing self-report data regarding their race and years of experience and thus omitted from these analyses. These 19 teachers only differed on one study variable (i.e., anticipation and responsiveness) from other teachers who had completed self-report data.

Finally, we examined whether negative student behaviors differed according to teachers' probabilities of membership in each teaching practices profile. According to Asparouhov and Muthén (2014), the Bolck, Croon, and Hagenaars (BCH) approach (Bakk & Vermunt, 2016; Bolck, Croon, & Hagenaars, 2004; Croon, 2002; Vermunt, 2010) is preferred when predicting continuous outcomes

Table 2
Descriptive statistics and zero-order correlations among study variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Monitoring	1															
2. Attention & responsiveness	0.76**	1														
3. Control	0.65**	0.67**	1													
4. Proactive behavior management	0.75**	0.89**	0.67**	1												
5. Meaningful participation	0.66**	0.74**	0.52**	0.80**	1											
6. Cultural responsiveness	0.54**	0.65**	0.53**	0.72**	0.81**	1										
7. Teacher race: Black	0.05	0.16	0.08	0.10	0.13	0.18	1									
8. Teacher race: White	−0.06	−0.13	−0.07	−0.09	−0.14	−0.16	–	1								
9. Teacher race: Other	0.01	−0.03	−0.03	−0.03	−0.00	−0.04	–	–	1							
10. Teacher years of experience	0.23*	0.20*	0.27*	0.26**	0.30**	0.24*	0.03	−0.21	0.21	1						
11. Class % White	0.07	0.24*	0.26*	0.18	0.27*	0.22*	−0.15	−0.07	0.29**	0.17	1					
12. Non-compliance	−0.39**	−0.41**	−0.35**	−0.44**	−0.42**	−0.36**	−0.15	0.05	0.13	−0.07	0.02	1				
13. Disruptiveness	−0.59**	−0.65**	−0.58**	−0.67**	−0.56**	−0.46**	−0.02	0.13	−0.13	−0.23*	−0.31**	0.52**	1			
14. Verbal aggression	−0.35**	−0.44**	−0.49**	−0.44**	−0.36**	−0.32**	−0.14	0.06	0.11	−0.21*	−0.29**	0.23**	0.56**	1		
15. Physical aggression	−0.25**	−0.43**	−0.36**	−0.37**	−0.27**	−0.30**	−0.14	0.06	0.11	−0.14	−0.11	0.26**	0.47**	0.43**	1	
16. Profanity	−0.21*	−0.17	−0.18	−0.12	−0.21*	−0.13	−0.15	0.17	−0.00	−0.11	−0.08	0.12	0.29**	0.38**	0.34**	1
N	103	95	103	103	103	103	84	84	84	84	103	103	103	103	103	103
Mean	3.00	2.55	3.18	2.50	1.80	1.21	0.56	0.37	0.27	3.25	0.07	2.60	24.51	0.54	0.16	0.13
SD	0.67	0.71	0.59	0.66	0.64	0.55	0.50	0.45	0.37	0.98	0.07	4.17	20.96	0.02	0.33	0.30
Min	1.42	1.00	1.70	1.17	0.50	0.33	0.00	0.00	0.00	1.00	0.00	0.00	1.33	0.00	0.00	0.00
Max	4.00	4.00	4.00	3.83	3.22	2.57	1.00	1.00	1.00	4.00	0.42	28.67	122.33	4.33	1.33	1.33

* p < .05
** p < .01

from latent profiles. This method uses a weighted multiple group analysis, where weights reflect measurement error of the latent profiles variable. After conducting the LPA, the second step of the BCH method was to determine the measurement error for the most likely profile variable (Asparouhov & Muthén, 2014). The third step was to estimate the LPA using the most likely profile variable, fixing the measurement error of the most likely profile to the values computed in the second step. The BCH method was then used to test whether there were mean differences in student behaviors (i.e., non-compliance, disruptions, verbal aggression, physical aggression, and profanity) across the profiles. There was no missing data for any of the student behavior variables.

3. Results

3.1. Descriptive statistics and bivariate correlations

Descriptive statistics for all study variables are presented in Table 2. With regard to classroom management, teachers generally demonstrated frequent use of monitoring, attention and responsiveness, control, and proactive behavior management, with no teachers scoring lower than a 1 (*seldom*) on these scales, and with means above the midpoint of the 5-point scale, reflecting use of the practices *a lot of the time* or *almost continuously*. In contrast, the scores for teacher and student meaningful participation and cultural responsiveness were low, with no teachers scoring above a 3.2 for either variable and with the means below the midpoint of the scale, reflecting use of the practices *never*, *seldom*, or *some of the time*. Zero-order correlations demonstrated that classroom management techniques were highly correlated with one another (rs = 0.52 to 0.89). Skew (ranging from -0.079 to 0.577) and kurtosis (ranging from -0.277 to -0.789) for all classroom management variables were within normal range.

ANOVAs demonstrated that teachers did not differ according to race on any of the classroom management techniques, including cultural responsiveness ($F(2,83) = 1.46$, $p = .24$). t-Tests confirmed that when compared to White teachers ($M = 1.05$, $SD = 0.42$), neither Black ($M = 1.28$, $SD = 0.60$) nor other non-White ($M = 1.15$, $SD = 0.54$) teachers demonstrated higher use of culturally responsive classroom management techniques ($ps = .10$ and .54, respectively). Teacher years of experience was weakly-moderately positively related to all classroom management techniques. The percentage of White students in the classroom was moderately positively related to attention and responsiveness, control, meaningful participation, and cultural responsiveness (rs = 0.22 to 0.27). Additionally, all six classroom management techniques were moderately negatively associated with student non-compliance, disruptions, verbal aggression, and physical aggression ($rs = -0.25$ to -0.67). Only monitoring and meaningful participation were significantly, negatively associated with profanity.

3.2. Latent profiles of classroom management techniques

A series of LPA models with up to five latent classes was fit using the six indicators of observed classroom management techniques of monitoring, attention and responsiveness, control, proactive behavior management, teacher and student meaningful participation, and cultural responsiveness in 103 classrooms. The best fit for the LPA of classroom management techniques included three profiles (see Table 3 for fit statistics and Fig. 1 for a graphical representation of the three-profile model). As compared to the 2-profile solution, the 3-profile solution demonstrated a lower AIC, BIC, adjusted BIC, and significantly improved fit according to the LMR, VLMR, and Bootstrapped LRT values. Although the 4-profile solution had lower AIC, BIC, and adjusted BIC values as well as a significant bootstrapped LRT test than the 3-profile solution, it did not demonstrate a significant improvement in fit according to the LMR and VLMR tests. Additionally, the 4-class solution did not enhance theoretical meaning, as it only split the high-quality profile into high and mid-high profiles. Therefore, the more parsimonious 3-profile solution was chosen. Entropy for the three-profile

Table 3
Fit statistics for latent profile analysis of teacher classroom management techniques.

Classes	Log likelihood	AIC	BIC (ss-adj. BIC)	LMR (VLMR) LRT p values	Bootstrap LRT p values	Entropy	Class proportions
1	−479.63	987.27	1024.15(979.93)				
2	−417.06	888.13	959.27(873.98)	.08(.08)	< .001	0.890	53 (51.4%)
							50 (48.6%)
3	**−354.08**	**776.16**	**865.74(758.34)**	**.01(.01)**	**< .001**	**0.903**	**29 (28.1%)**
							39 (37.9%)
							35 (34.0%)
4	−332.11	746.23	854.25(724.74)	.48(.48)	< .001	0.899	24 (23.3%)
							40 (38.8%)
							10 (9.7%)
							29 (28.2%)
5	−311.01	718.02	844.48(692.86)	.23(.24)	< .001	0.919	12 (22.3%)
							11 (10.7%)
							33 (32%)
							26 (25.2%)
							10 (9.7%)

Note. AIC = Akaike information criteria, BIC = Bayesian information criteria, ss-adj BIC = sample-size adjusted Bayesian information criteria, LMR = Lo-Mendell-Rubin, VLMR = Vuong-Lo-Mendell-Rubin, LRT = likelihood ratio test. The best fitting class solution is noted in bold.
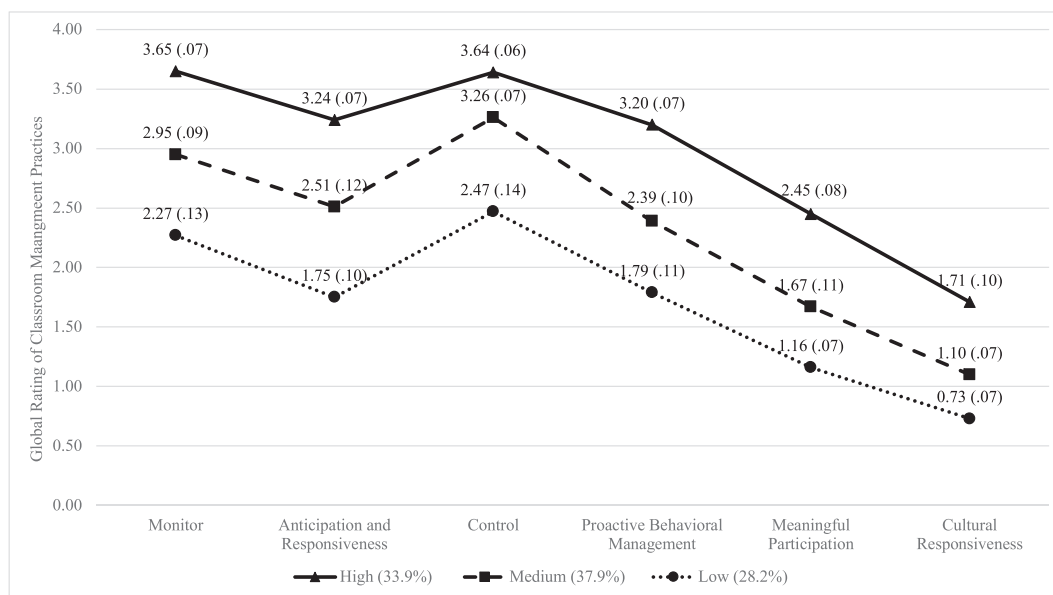
Fig. 1. Latent profiles of teacher classroom management practices. Values on the y-axis represent average scores on the 4 point (0 = *never*, 4 = *almost continuously/often occurred*) Likert-type observational rating scale for each of the classroom management techniques. Means are presented followed by SE in parentheses.

solution was 0.90.

The three-profile solution indicated ordered profiles of high-, medium-, and low- classroom management teachers (Fig. 1). Specifically, the "high" classroom management teachers ($n = 25$, 33.9%) demonstrated higher use of all six classroom management techniques, including cultural responsiveness, than other teachers, with "medium" classroom management ($n = 39$, 37.9%) teachers scoring the next highest on all practices, and "low" classroom management ($n = 29$, 28.2%) teachers demonstrating the lowest use of all practices. The relative frequency of use of each practice within each profile was generally consistent across each profile. In all profiles, teachers demonstrated the highest levels of monitoring, control, proactive behavior management, and anticipation and responsiveness. Across all three classes, meaningful participation was the second-lowest dimension of classroom management, followed by culturally responsive teaching practices. Examination of the standard errors of the point estimates (i.e., mean ± 1SE) indicted distinction between the indicators within each profile. The posterior probabilities, indicating the likelihood of being correctly classified within each profile, were 0.97, 0.96, and 0.95, for the high, medium, and low profiles, respectively.

Because teachers demonstrated such low levels of cultural responsiveness, we were interested in examining whether there were any particular items on this scale that were more or less frequently endorsed than others. We conducted post-hoc analyses exploring average levels of each of the seven items (i.e., providing real-world examples, personal story telling, using humor, incorporating cultural artifacts, employing rhythmic or call-and-response strategies, giving direct commands, providing opportunities to co-teach) on the cultural responsiveness scale for each profile (see Fig. 2). All three groups had higher scores on giving direct commands than any other another item, followed by providing real-world examples. The low and medium groups scored lowest on incorporating cultural artifacts, while the high group scored lowest on personal storytelling. The low group averaged below 1 (*Seldom*) for all items except direct commands, and the medium group averaged below 1 (*Seldom*) for all items except direct commands, providing real-world examples, and employing rhythm or call-and-response. With the exception of personal story telling, real-world examples, and direct commands, the high group averaged between 1 (*Seldom*) and 2 (*Sometimes*) on the five-point scale (0–4).

3.3. Association between teacher and classroom characteristics and profiles

Table 4 presents the results of the multinomial regression that tested the association between teacher and classroom characteristics and the profiles of teacher classroom management practices. No significant differences were found for teacher race in regard to management profile; Black and other minority teachers were as likely as White teachers to be categorized into high, low, and medium profiles. Similarly, teacher experience was unrelated to profile membership, as those with more years of experience were no more or less likely to be in the low or medium profile than the high profile. However, teachers in classrooms with higher percentages of White students were significantly less likely to be in the low and medium profile than the high profile.

3.4. Association between classroom management profiles and student behaviors

In order to determine whether the means of six student behaviors (non-compliance, disruptions, verbal aggression, physical aggression, profanity) differed across the latent classroom management profiles, an overall chi-square test was conducted to examine
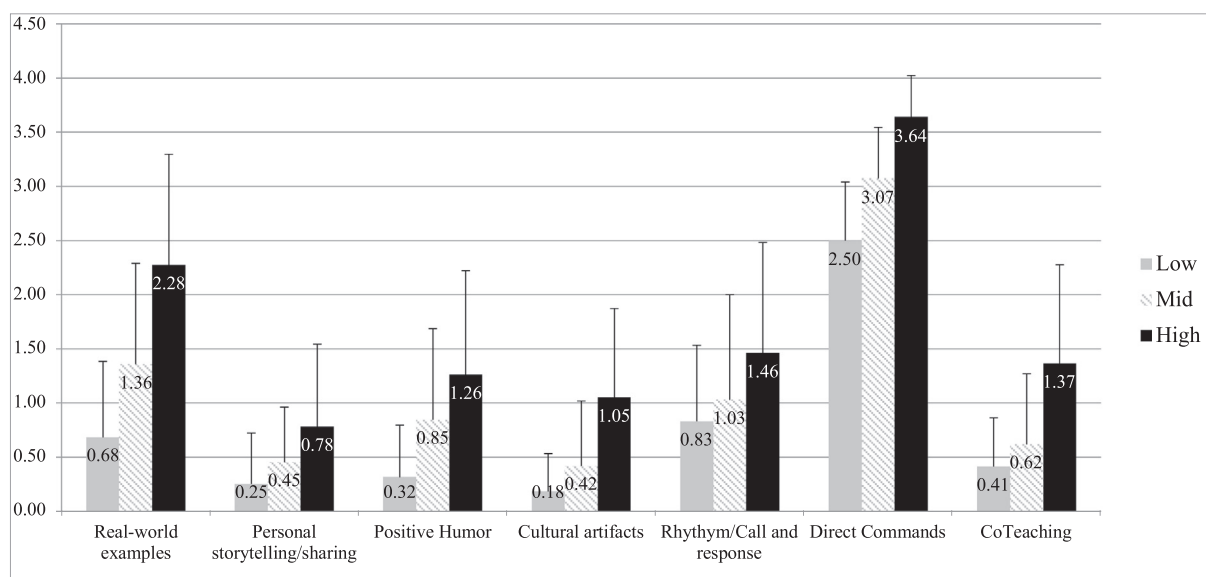
Fig. 2. Average ratings of each item of the cultural responsiveness scale for the three profiles. Values on the y-axis represent average scores on the 4 point (0 = *never*, 4 = *almost continuously/often occurred*) Likert-type observational rating scale. Means are presented in each bar. Lines extending from each bar represent 1SD above the mean.

Table 4
Comparisons of the teacher and classroom characteristics of the latent classes using multinomial logistic regressions.

	Medium Estimate (SE)	Low Estimate (SE)
Black	> −0.35 (0.65)	> −0.59 (0.70)
Other minority	> −0.10 (0.34)	> 0.91 (1.08)
Years of experience	> −0.20 (0.34)	> −0.42 (0.33)
Class % White	> −8.72 (4.30)*	> −12.81 (6.36)*

    * Indicates significant difference ($p < .05$) as compared to high LPA profile.

latent profile differences for each of the six student behaviors, with pairwise chi-square tests following to identify the specific differences among the three profiles (see Table 5). For non-compliance, disruptions, verbal aggression, physical aggression, the chi-square test indicated significant differences across profiles. For each of these variables, students in low classroom management classrooms demonstrated more negative behaviors than students in both medium and high classroom management classrooms. In addition, for disruptions, students in medium classroom management classrooms demonstrated more of these behaviors than students in the high classroom management classrooms. For profanity, the overall chi-square was non-significant, suggesting that students' use of profanity does not differ according to their teacher's classroom management profile.

4. Discussion

    The overarching goal of the present study was to examine profiles of teaching practices describing how classroom management

Table 5
Mean differences in student behaviors across the latent profiles.

	Overall χ^2, *p*-value	High[1] Mean (SE)	Medium[2] Mean (SE)	Low[3] Mean (SE)
Non-compliance	17.17, < .001	1.04 (0.31)[3]	1.66 (0.45)[3]	5.95 (1.16)[1,2]
Disruptions	66.32, < .001	10.10 (1.21)[2,3]	22.36 (2.17)[1,3]	45.72 (4.99)[1,2]
Verbal Aggression	29.78, < .001	0.13 (0.05) [3]	0.31 (0.10) [3]	1.41 (0.24) [1,2]
Physical aggression	15.85, < .001	0.08 (0.03)[3]	0.04 (0.02)[3]	0.44 (0.10)[1,2]
Profanity	5.02, .081	0.08 (0.04)[3]	0.10 (0.05)	0.26 (0.07)[1]

Note. Subscripts following a mean score represent a statistically significant difference on chi-square test of independence at the $p < .05$ level between the column class and the subscript denoted (i.e., 1 = high profile, 2 = medium profile, and 3 = low profile).

techniques co-occur within individual teacher practice, with a specific interest in the relation between cultural responsiveness and more traditional domains of classroom management. We were also interested in how these profiles are associated with teacher and classroom contextual factors, and student behaviors. The LPA revealed three largely ordered profiles based on observers' ratings of classroom management techniques: 1) high (33.9%), 2) moderate (37.9%), and 3) low (27.2%) levels of classroom management. In addition, we found that classrooms with a higher percentage of White students were more likely to be in the high classroom management profile. Students in the high classroom management profile were less likely to demonstrate negative behaviors, such as physical or verbal aggression.

4.1. Profiles of teacher practices

High classroom management teachers demonstrated higher use of all six classroom management techniques, followed by medium, and finally low classroom management teachers. The results suggested that teachers' use of culturally responsive teaching practices, as measured and observed in this study, were not utilized as extensively in these classrooms as the more general classroom management strategies; these practices were generally rated the lowest across the six practices examined. This finding is somewhat surprising, given this sample of classrooms had a relatively high concentration (average 93%) of Black/African American students. Nonetheless, the overall pattern of scores for culturally responsive practices followed a similar trend as for the other five classroom management practices. Specifically, teachers who demonstrated higher levels of other domains of classroom management also demonstrated the highest levels of cultural responsiveness. This association was also apparent in the bivariate correlations, whereby culturally responsive teaching practices was moderately strongly and positively correlated with the other five indicators of behavior management. It is likely that teachers who are more culturally responsive are in general better able to monitor, anticipate, and respond to student needs, establish and maintain control within the classroom, and elicit students' participation in classroom activities (Brown, 2004; Monroe & Obidah, 2004).

The extent to which teachers did engage in culturally responsive practices appeared to be largely driven by their use to direct commands, which is consistent with previous qualitative research describing direct verbal commands as an important and frequently-used culturally responsive practice (Brown, 2004; Weinstein et al., 2003). Teachers were less likely to use other culturally responsive practices, such as incorporating personal story telling, real world examples, or cultural artifacts, which may more explicitly incorporate students' perspectives, identities, or backgrounds into the classroom. Relatedly, teachers across all three profiles also tended to score low in meaningful participation. Consistent with a strong bivariate correlation between cultural responsiveness and meaningful participation ($r = 0.81$), it is possible these domains of classroom management are inherently linked; teachers who are responsive to students' cultural backgrounds may also be more adept at encouraging their contribution and leadership within the classroom (Bondy, Ross, Gallingane, & Hambacher, 2007). It is also possible that cultural responsiveness and meaningful participation are particularly strongly related in majority non-White classrooms, as incorporating students' cultural backgrounds may facilitate participation and engagement for students of color.

4.2. Associations of teacher and classroom characteristics with profile membership

Teachers in classrooms with higher proportions of White students were more likely to be characterized by high levels of classroom management quality. Given the cross-sectional design, it is difficult to draw any firm conclusions regarding the directionality or possible reasons for such an association. However, considering that the racial composition of students in classrooms in this sample is consistent with school-level demographics, the higher concentration of White students in classrooms with teachers who demonstrate high levels of classroom management may be a result of teacher self-selection bias, recruitment, and/or retention practices at the school level. Schools with higher percentages of White students tend to have more comprehensive curricular offering, financial resources, and smaller class sizes (Darling-Hammond, 2004), which attract and retain higher quality teachers (Guarino, Santibanez, Daley, & Brewer, 2004).

Another interesting finding was that the percentage of White students in the classroom was significantly *positively* correlated with culturally responsive classroom management practices in the bivariate analyses. Although we would expect that teachers would use more culturally responsive practices in classrooms with higher proportions of students of color, the results of the LPA provide some context for this counterintuitive finding. If, as suggested by the other results, cultural responsiveness is an extension of more traditional domains of classroom management, and teachers tend to demonstrate more favorable classroom management practices in classrooms with more White students, it follows that teachers would also use more culturally responsive practices in these classrooms. Although general classroom management and cultural responsiveness appear to be linked, it is likely that more support is needed for teachers to implement culturally responsive strategies with students of color. Caution should be taken, however, when interpreting this finding, as all of the classrooms in this study were composed of majority non-White students (0%–42% White students, average 7%). Therefore, additional research is needed regarding this finding in more heterogeneous classrooms.

Unlike classroom composition, teacher race was not related to classroom management profile membership. Although prior research would suggest that teachers of color would use more culturally responsive teaching practices (García & Guerra, 2004; Nieto, 1999; Saffold & Longwell-Grice, 2008; Sleeter, 2001; Villegas & Irvine, 2010), research does not suggest that teachers differ systematically according to race on other more traditional indicators of quality. Thus, considering that cultural responsiveness did not operate independently of other dimensions of classroom management, and that profiles were differentiated according to high, medium, and low frequency of all six classroom management techniques, it is not surprising that teacher race was unrelated to profile membership. It is important to note that the sample for the current study was somewhat unique in that a plurality of teachers

identified as Black (46%), which does not reflect the national (8% Black; Policy and Program Studies Service, 2016) or state-wide (17.7% Black; Maryland State Department of Education, 2017) teaching workforce. It is also important for future research to consider how student-teacher racial/ethnic match may influence the use of culturally responsive and other classroom management practices, given previous research suggesting that this alignment may influence the practices that teachers use and the effectiveness of these practices for student outcomes in differing contexts (Yarnell & Bohrnstedt, 2018).

It was surprising that teacher years of experience did not emerge as a significant predictor of profile membership, particularly considering the ordered structure of the profiles identified in this study, reflecting lower to higher frequency of classroom management practices. Prior studies have demonstrated that teacher years of experience is related to more effective classroom management strategies (Martin, Yin, & Mayall, 2006; Ritter & Hancock, 2007; Unal & Unal, 2012). With almost half of the sample reporting nine or more years of experience, it is possible that we did not capture enough variability in this sample to detect differences. Alternatively, some researchers have generally criticized the use of years of experience as a measure of merit, arguing that it is teachers' preparation, professional development, and collaboration with other teachers that contribute to their effectiveness (Darling-Hammond, 2000; Rosenholtz, Bassler, & Hoover-Dempsey, 1986). It may be more informative to examine other psychological and attitudinal variables, such as job satisfaction or burnout and opportunities for continued learning, as predictors of teachers' use of classroom management practices (e.g., Emmer & Stough, 2001).

4.3. Association between classroom management profiles and student behaviors

Finally, in examining the association between classroom management profiles and student behavior, our results suggested that, on average, students whose teachers demonstrated low levels of classroom management displayed significantly more negative behaviors than students whose teachers demonstrated medium or high levels of classroom management. Given the cross-sectional design, it is difficult to determine directionality of this association. Prior research suggests that a variety of classroom management techniques, including monitoring and supervision, providing specific praise, clearly establishing expectations, and actively engaging students in the learning process, may result with fewer behavioral problems in the classroom (Simonsen et al., 2008); similarly, experimental studies examining the impact of classroom management programs have also demonstrated a significant causal impact on student behavior problems. Alternatively, it is quite possible that classrooms with lower levels of disruption are easier for teachers to manage (Owens et al., 2018), thereby suggesting a transactional process between these classroom contextual factors and teachers' use of classroom management practices. It is important to emphasize that students whose teachers demonstrated medium levels of classroom management did not display significantly more negative classroom behaviors than students with high classroom management teachers (with the exception of disruptions). This may suggest a threshold effect, whereby a certain level of competence in classroom management may be sufficient to prevent most behavioral disturbances in the classroom.

Because culturally responsive teaching practices appeared to be associated with classroom management competence (see bivariate correlations in Table 2; ranged from 0.53 to 0.81), the nature of the profiles identified in this study preclude us from isolating the effect of culturally responsive teaching practices on student behaviors from the importance of general classroom management techniques. Instead, our findings suggest that the use of culturally responsive practices co-occurred with the use of other classroom management practices. Therefore, it is possible that these practices jointly contribute to the lower levels of negative behaviors in the classroom.

4.4. Limitations and future directions

Although this study makes important contributions to both the literature on culturally responsive practices and classroom management in general, it is not without limitations. First, the data is cross-sectional, with classroom practices and student behaviors captured simultaneously. A longitudinal analysis in the context of the intervention will more accurately speak to the causality between teacher practice and student behavior, and determine whether change in teacher practice contributes to change in student behavior as expected. It will also be essential to use longitudinal methodology to examine potential changes in these profiles over the course of the school year, and persistence across school years. Furthermore, experimental studies testing the impact of different types of professional development models and interventions focused on culturally responsive practices or classroom management will further enable us to isolate the causal and unique impact of these practices on student behavior and disproportionality. Given that these data come from the baseline of the randomized trial testing the Double Check intervention, it is possible to leverage these profiles as possible effect modifier of the impact of the intervention (Bradshaw et al., 2018). For example, one might hypothesize that teachers in the low classroom management profile might be most responsive to the supports provided through the intervention, as they have the most room for improvement.

Due to the design of the study, we were unable to link our data to other student- or classroom-level data, such as specific student demographic characteristics or school records of academic achievement or disciplinary actions. Relying on observers' counts of the number of White students present during the observation time period does not take into consideration students' own identities, and only assesses whether students represent a visible minority group. Although research has documented that skin color has significant implications for experiences of discrimination and disparities in academic and financial outcomes regardless of racial or ethnic background (Herring, Keith, & Horton, 2004), the use of this proxy is a significant limitation, particularly given our interest in cultural responsiveness. For example, it is possible that the observers' own implicit biases about race, ethnicity, and skin color may have influenced their ratings of the classroom and students' behavior. School records of academic achievement or disciplinary actions would also provide a more robust assessment of the student outcomes of interest and would better be able to speak to the implications

of classroom management techniques for reducing disproportionality. In addition, scholars have expressed concerns regarding the use of racial categories in research, as these categorizations can perpetuate problematic discrimination and stereotyping of certain groups (Helms, Jernigan, & Mascher, 2005). Future research should consider how to better integrate conceptual constructs that represent psychological processes, instead of static categorizations of race, into statistical models.

Additionally, as noted above, our sample included more Black teachers than the national and state average, as well as more male teachers. Nationally and in Maryland, males comprise about 20% of the teaching population (National Center for Education Statistics, 2016; Smarick et al., 2016); in our study, 37.9% of teachers were male. Thus, it is possible that our study is limited in its ability to generalize to all educational settings; however, these results may be particularly relevant to urban contexts, which tend to have more teachers of color and male teachers than rural or suburban areas (Policy and Program Studies Service, 2016).

Although the strengths of conducting non-participant classroom observations have been well-documented for their standardization, reliability, and objectivity (Mashburn, Meyer, Allen, & Pianta, 2014), they are limited in that they only provide a brief snapshot of teaching practices. It is possible that teachers utilized the classroom management strategies to different degrees during unobserved times; however, these concerns are mitigated by the fact that three observations were conducted and the ICCs across the three time periods were high. Relatedly, there are also advantages to understanding an individual student's perception of teacher practices, which were not captured in this study. It is possible that students' perceptions of their teachers' ability to manage their classroom, and especially to respond to their cultural background (Howard, 2001), influences student classroom behavior, regardless of whether these practices are being utilized within the classroom as a whole.

Another limitation of this paper concerns the measurement of culturally responsive classroom management practices. Unfortunately, the state of science regarding how to best observe and assess culturally responsive practices is extremely limited (see Jensen, Grajeda, & Haertel, 2018 for a notable exception), although current initiatives are ongoing to address this need (Gaias, Shivers, & Dumka, 2017). In an effort to establish consensus and clarity regarding the operationalization of these practices, researchers have been grappling with concerns over content validity, timing and feasibility of assessments, and the training and reliability of observers. The current measure represents one of the first efforts to systematically observe culturally responsive classroom management practices; however, is not free from such concerns. It is possible that the results of this study were influenced by measurement limitations, and that similar research conducted with a different scale may yield different results, such as higher scores and more variability on the cultural responsiveness indicator.

In the current study, culturally responsive classroom management was intentionally operationalized to be applicable broadly to diverse cultural groups; as such, items that reflected engagement of student voice and power to influence their learning (e.g., co-teaching), as well as items that may be more specifically responsive to the backgrounds of marginalized student populations (e.g., examples relevant to youth's real world experiences, incorporating cultural artifacts, storytelling) were included. This approach yielded a measure that would be more appropriate for a range of school and classroom settings than any particular context. Although we may expect culturally responsive educators to recognize and understand the specific beliefs, values, needs, and perspectives of the students within their classroom, this is a less feasible approach for an observational measure that may be used widely in a variety of settings. Future research should continue examine the extent to which this measure, or any additional, systematic observational assessments of cultural responsiveness, is able to validly capture teacher practices in diverse and varied settings. For example, it is unclear whether practices such as giving direct commands, which were utilized frequently in this setting, would be considered culturally responsive in contexts with different student populations (e.g., schools with primarily Latino students, heterogeneous schools) than the current study. In addition, although practices that incorporate student voice and background are likely to enhance equity, incorporating a more active anti-bias focus into measures of culturally responsiveness represents another direction of future research. Practices that actively challenge structural inequality, systems of power and discrimination, and societal injustices are a critical component of cultural responsiveness (Ladson-Billings, 1995), but are rarely enacted in the classroom (Young, 2010), and are not captured in the current measure.

In addition, future measurement development work may also operationalize cultural responsiveness as a construct that operates more distinctly from other classroom management domains, facilitating more substantive implications about the differential impact of cultural responsiveness and other practices for student behaviors. It is also possible that culturally responsive practices may be either a predictor or consequence of general classroom management, whereas we conceptualized it as domain of classroom management; additional research is needed to further examine the various domains of classroom management in relation to culturally responsive practices. Advances in measurement development will contribute to a body of literature examining the effectiveness of cultural responsiveness on student behavior, disciplinary actions, and disproportionality.

4.5. Conclusions and implications

Currently, there exists a stark gap between the theoretical literature describing and promoting culturally responsive teaching practices and systematic empirical research evaluating the impact of these practices (Young, 2010). Culturally responsive practices are complex and difficult to operationalize, categorize, and measure in a systematic manner (Morrison, Robbins, & Rose, 2008). They are often presented in the literature as case studies, focused on a single teacher or group of teachers who have transformed their teaching practices according to the backgrounds of the students in their classroom; the overwhelming use of this methodology also serves to highlight the infrequency with which these practices are implemented. The current study is one of few to systematically examine the use of culturally responsive practices in the classroom through observations, and to investigate these practices in relation to effective classroom management. Consequently, results from the current study highlight important implications for understanding and improving teachers' practices in the classroom, through an examination of both cultural responsiveness and more traditional

domains of classroom management techniques.

Taken together, our findings suggest that there is a subset of teachers (approximately 28% of the sample) who demonstrate poor classroom management techniques in general; these teachers also tend to demonstrate low levels of culturally responsive practices and elevated rates of student behavior problems. As such, this subgroup of teachers is in particular need of comprehensive training to support them in fostering a positive classroom environment that is structured, engaging, productive, and encourages student learning and growth. Identifying these teachers is especially important considering that their students demonstrate higher levels of negative classroom behaviors, which can lead to reduced academic learning and discipline referrals (Bradshaw et al., 2010; Skiba, Peterson, & Williams, 1997; Wright & Dusek, 1998).

In addition, the very low prevalence of cultural responsiveness and meaningful participation in this study suggests that *all* teachers are in need of training to increase their use of these practices. These two domains of classroom management reflect socio-cultural participation-centered techniques, which not only build orderly and productive classrooms, but collaborative and engaging ones as well. However, teachers tend to receive more training in traditional teacher-directed classroom management techniques, where teachers establish and maintain order through rules, routines, expectations, incentives, and their own perceptions of students' needs (Freeman, Simonsen, Briere, & MacSuga-Gage, 2014), which is reflected in higher scores on classroom control, monitoring, anticipation and responsiveness, and proactive behavior management. In contrast, this study indicates that teachers may need particular training focusing on enhancing joint engagement and participation through incorporating student perspectives and responding to students' cultural backgrounds into classroom processes. This need for intentional and explicit training regarding culturally responsive practices may be particularly important consider given the growing diversity of students with U.S. schools (National Center for Education Statistics, 2016). Our study also suggests that this training is needed for teachers of all racial/ethnic backgrounds, and assumptions cannot be made regarding the use of culturally responsive practices by teachers of color or in more diverse classrooms. In the current study, teachers of color did not, on average, demonstrate higher levels of culturally responsive practices than White teachers. Some research has suggested although teachers of color have a deeper understanding and commitment to the use of culturally responsive practices, they have not necessarily received more training regarding the implementation of culturally responsive pedagogical practices than White teachers and themselves have to navigate an educational system that reflects White cultural norms (Meacham, 2000; Sleeter, 2001).

In conclusion, the current study integrated two disparate bodies of literature by jointly examining traditional and culturally responsive classroom management practices, whereas prior research has often conceptualized and examined them independently. This siloed approach is not reflective of actual teaching practice, where educators are encouraged to integrate and draw upon a variety of strategies in their interactions with students of various backgrounds throughout the day (Vincent et al., 2011). These findings highlight the overlap between these domains of practice, suggesting that culturally responsive classroom management practices may operate as an extension of classroom management quality, including control, monitoring, anticipation of and responsiveness to problems, proactivity, and classroom participation. The results further suggest that while a subset of teachers is in need of professional development more generally on the full range of classroom management techniques, there appears to be considerable room for increased use of practices reflecting meaningful participation and cultural responsiveness among a large proportion of teachers.

Declaration of Competing Interest

None.

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