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Teacher Perceptions of Influence, Autonomy, and Satisfaction in the Early Race to the Top Era

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Abstract: In the present study, hierarchical linear modeling with random intercept models was used to estimate the impact school and teacher-level factors had on K-12 teachers' perceptions of school influence, curricular and pedagogical autonomy, and job satisfaction in the early years of the Race to the Top Era. The main predictors investigated were whether students' standardized test scores were used as a component of either a teacher's formal teacher evaluation or compensation, as well as

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whether teachers worked in a Race to the Top state. Additional school- and teacher-level predictors included percentage minority teachers and students, urbanicity of the school, teacher grade band, years teaching experience, and annual base salary. The study's findings include statistically significantly yet small, negative correlations between teaching in a RTTT Phase I or II state at the time of the survey and teachers' perceptions of their school-level influence, curricular autonomy, and pedagogical autonomy. In addition, the use of SGM measures in teacher evaluation, compensation, or both, statistically significantly negatively predicted both teachers' pedagogical and curricular autonomy, as well as job satisfaction. These findings are consistent with previous studies that found teachers' classroom autonomy and job satisfaction to be lessened post-NCLB (Crocco & Costigan, 2007; Faulker & Cook, 2006; Huss & Eastep, 2011).
Keywords: student growth models; teacher influence; teacher autonomy; teacher job satisfaction; Schools & Staffing Survey

Percepciones de los maestros sobre la influencia, la autonomía y la satisfacción en la era Race to the Top

Resumen: El presente estudio estima el impacto que los factores de nivel escolar y docente tuvieron en las percepciones de los docentes K-12 sobre la influencia escolar, la autonomía curricular y pedagógica y la satisfacción laboral en los primeros años de la Carrera hacia la Era Superior. Los principales predictores investigados fueron si los puntajes de las pruebas estandarizadas de los estudiantes se utilizaron como un componente de la evaluación o compensación formal del docente del docente, así como también si los docentes trabajaron en un estado Race to the Top. Los predictores adicionales a nivel de escuela y maestro incluyeron porcentajes de maestros y estudiantes minoritarios, urbanicidad de la escuela, banda de grado de docentes, años de experiencia docente y salario base anual. Los hallazgos del estudio incluyen correlaciones estadísticamente significativas aunque pequeñas, negativas entre la enseñanza en un estado RTTT Fase I o II en el momento de la encuesta y las percepciones de los maestros sobre su influencia a nivel escolar, autonomía curricular y autonomía pedagógica. Además, el uso de medidas SGM en la evaluación del maestro, la compensación, o ambos, estadísticamente predijo negativamente tanto la autonomía pedagógica como la autonomía curricular de los docentes, así como la satisfacción laboral. Estos hallazgos son consistentes con estudios previos que encontraron que la autonomía del aula de los docentes y la satisfacción laboral se redujeron después de NCLB (Crocco & Costigan, 2007; Faulker & Cook, 2006; Huss & Eastep, 2011).
Palabras clave: modelos de crecimiento estudiantil; influencia del maestro; autonomía del maestro; satisfacción laboral del maestro; encuesta

Percepções dos professores sobre influência, autonomia e satisfação na época Corrida ao Topo

Resumo: O presente estudo estima o impacto que fatores escolares e educacionais tiveram sobre as percepções dos professores do ensino fundamental e médio sobre a influência escolar, a autonomia curricular e pedagógica e a satisfação no trabalho nos primeiros anos da Corrida à Era. Superior Os principais preditores investigados foram se as pontuações dos testes padronizados dos alunos foram usadas como um componente da avaliação do professor ou compensação formal, bem como se os professores trabalharam em um estado de corrida para o topo. Preditores adicionais nos níveis de escola e de professores incluíam porcentagens de professores e alunos de minorias, urbanismo escolar, faixa de notas de professores, anos de experiência de ensino e salário base anual. Os resultados do estudo

incluem correlações estatisticamente significativas, mas pequenas, negativas entre o ensino em um estado RTTT de Fase I ou II no momento da pesquisa e as percepções dos professores sobre sua influência no nível de escola, autonomia do currículo e autonomia pedagógica. Além disso, o uso de medidas de SGM na avaliação de professores, compensação, ou ambos, previu, estatisticamente, negativamente tanto a autonomia pedagógica quanto a autonomia curricular dos professores, bem como a satisfação no trabalho. Essas descobertas são consistentes com estudos anteriores que concluíram que a autonomia e a satisfação no trabalho dos professores foram reduzidas após a NCLB (Crocco e Costigan, 2007, Faulker & Cook, 2006, Huss & Eastep, 2011).
Palavras-chave: modelos de crescimento estudantil; influência do professor; autonomia do professor; satisfação profissional do professor; enquete

Teacher Perceptions of Influence, Autonomy, and Satisfaction in the Early Race to the Top Era

Much of the debate surrounding teacher evaluation research and policy discussions converges on how to appropriately measure the relationship between teacher quality and student achievement. While some researchers feel strongly that statistical modeling can accurately account for a teacher's contribution to student achievement (Hanushek & Rivkin, 2010; Kane, McCaffrey, Miller, & Staiger, 2013), others question whether successful teaching can be measured at all using a student's score on a standardized test (Amrein-Beardsley, 2014; Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein, 2011). Three main policy events catalyzed this growing debate in educational research: (a) the passage of the No Child Left Behind Act (NCLB) (2002) that required states to focus heavily on standardized testing to measure student achievement; (b) the Obama administration's 2009 issuance of federal Race to the Top grant funding (RTT) to states implementing several teacher quality evaluation measures, including the use of standardized test scores; and (c) the 2011 provision of NCLB sanction waivers to states that agreed to tie teachers' overall evaluation scores to their students' success on high stakes tests.

The present study uses a nationally representative sample to examine the early impact RTT-related shifts in teacher evaluation and compensation had on K–12 teachers' perceptions of school-level influence, autonomy, and job satisfaction, where both the evaluation and job satisfaction survey were administered within the same academic year. The dependent measures were chosen for the present study because they have all been previously shown to be impacted by both NCLB and RTT policy changes (Crocco & Costigan, 2007; Faulkner & Cook, 2006; Grissom, Nicholson-Crotty, & Harrington, 2014; Huss & Eastep, 2011; Koedel, Li, Springer, & Tan; 2017; Lacerino-Paquet, Bocala, & Bailey, 2016) and have also been shown to impact teacher retention (Guarino, Santibañez & Daley 2006; Ingersoll & May, 2011; Sparks, Ralph, & Malkus, 2015). Though the Every Child Succeeds Act (ESSA, 2015) eliminated the federal requirement that states tie SGM to teachers' evaluation scores, many states, including non-RTT states, such as Texas, have chosen to continue using SGM as a component of teacher evaluation (National Council on Teacher Quality, 2015). With nationwide teacher shortages particularly acute in tested subjects directly impacted by SGM, such as mathematics (Cowan, Goldhaber, Hayes, & Theobold, 2015; Sullivan et al., 2017; Sutcher, Darling-Hammond, & Carver-Thomas, 2016), it is imperative to further document the impact teacher evaluation accountability reform efforts have on teachers' work lives.

This study contributes to the research literature on how teacher evaluation systems, such as those utilizing SGM, may be impacting teachers' views of the profession, specifically their sense of control over their work at both the classroom and school level, as well as their overall satisfaction

with teaching. Additionally, with the inclusion of whether a teacher was teaching in a RTT state at the time of the survey, we hope to capture the early impacts of teacher evaluation reform efforts on the national level. Because teacher evaluation policies are largely determined at the state level, we utilized data from the National Center for Education Statistics' (NCES) 2011 – 12 *Schools and Staffing Survey* (SASS) Teacher Questionnaire to investigate these differences across a large, national sample of teachers. Though several recent studies have used the 2011–12 SASS data to examine similar dependent variables (Lacireno-Paquet, Bocala, & Bailey, 2016; Grissom, Nicholson-Crotty, & Harrington, 2014), the current study takes a more in-depth look at the differential impact of SGM on teacher perceptions of school influence, curricular and pedagogical autonomy at the classroom level, and job satisfaction across the K–12 spectrum.

While prior studies utilizing the 2011–12 SASS data set have focused on how general evaluation practices interact with other campus climate factors (Lacerino-Paquet, Bocala, & Bailey, 2016) or how teachers' general job satisfaction has changed over time post-NCLB (Grissom et al, 2014), the current study looks specifically at whether the use of student test scores as a component of a teacher's formal evaluation or compensation resulted in different levels of teachers' perceptions of their influence at the school level, classroom autonomy in curricula and pedagogy, and overall job satisfaction. SGM are defined in numerous ways, however, the present study uses this term to include any teacher evaluation model in which student test scores are used to determine teacher effectiveness, in full or in part. This study's focus is not on the quality of any one model, rather on the impacts of SGM on teacher perceptions.

The following research questions guided the study:

1. To what extent are teacher perceptions of school-level influence, curricular and pedagogical autonomy, and job satisfaction attributable to differences across schools? Is there significant variation among schools in teacher perceptions of school-level influence, curricular and pedagogical autonomy, and job satisfaction?
2. What is the effect of SGM on teachers' school-level influence, controlling for teacher and school characteristics?
3. What is the effect of SGM on teachers' curricular autonomy, controlling for teacher and school characteristics?
4. What is the effect of SGM on teachers' pedagogical autonomy, controlling for teacher and school characteristics?
5. What is the effect of SGM on teachers' job satisfaction, controlling for teacher and school characteristics?

Literature Review

In order to receive waivers from NCLB sanctions, including the loss of Title I federal funding for poor student performance on standardized assessments, many states incorporated measures of student growth models (SGM), based on state standardized test scores, into teacher evaluation systems as a means of tying student achievement to varying percentages of teacher evaluation scores (U. S. Department of Education, 2012). In addition to the receipt of NCLB waivers, many states incorporated SGM into teacher evaluation models as a means of securing significant amounts of federal grant funding distributed through the RTT fund (required grantee states to tie student achievement data to teacher evaluation. RTT funds were the largest-to-date federal investment in education reform, providing $4 billion for statewide reform measures focused around four areas: 1) adoption of college and career standards and aligned assessments, 2) provision of data systems measuring student growth attributable to teachers, 3) teacher recruitment and

retention, and 4) turnaround efforts at low-performing schools (U. S. Department of Education, 2012). By December of 2010, the first two phases of RTT were announced, awarding over $3 billion to 11 states and the District of Columbia, with Tennessee ($500 million) and New York ($700 million) being the largest grant recipients. Among the strongest criticisms of RTT was the lack of strong research supporting its requirements, namely how or if using SGM to measure teacher quality would result in improving low-performing schools (Darling-Hammond & Rothman, 2011; Harris, 2010).

Multiple forms of SGM were used by school districts, with value-added measures (VAM) being the most frequently used form. Initially introduced by economist Eric Hanushek (1971), VAM use statistical methods to estimate a teacher's effect on student growth on state assessments, controlling for student and school-level characteristics, such as average years teaching experience and student socio-economic status. VAM are intended to provide actionable information for school administrators on what percentage of a teacher's students are underperforming, over-performing, or performing at par with students who are similar to them on a variety of factors, such as socio-economic status, school type, and teacher experience. VAM proponents argue that value-added modeling is a proven measure of teacher effectiveness. Even VAM critics admit that VAM have value in large-scale studies measuring a particular treatment or program's impact (Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein; 2011).

Problems arise, some researchers say, because VAM do not accurately explain the complex teaching process (Hinchey, 2010). Critics argue that a more ideal measure would be one that targets continuous improvement in teachers and identifies those teachers who are unable or unwilling to improve. The use of VAM, and other SGM, for teacher evaluation, "…assumes that student learning is measured well by a given test, is influenced by the teacher alone, and is independent of other aspects of the classroom context" (Darling-Hammond et al, 2011, p. 2). Other scholars have challenged the legality of state policies requiring the use of measures with, at best, questionable reliability and validity, in high stakes personnel decisions (Baker, Oluwole, & Green, 2013). In addition to the concerns expressed by individual education researchers, prominent research organizations, such as the American Statistical Association and the American Educational Research Association, have cautioned against the use of SGM measures like VAM for high-stakes decisions due to limitations in the validity of inferences that can be drawn about the contributions of individual teachers to students' standardized test scores (American Educational Research Association, 2015; American Statistical Association, 2014).

More recent research in teacher evaluation (Kane, McCaffrey, Miller, & Staiger, 2013) used a randomized controlled trial to explore whether the use of multiple measures of teacher effectiveness, such as student surveys, classroom observations, and student achievement gains, can more fully identify teachers who produced higher student achievement gains on average in the previous school year. Preliminary results showed that multiple measures of teaching effectiveness, including value-added measures, did identify teachers who had produced higher learning gains on average in the previous school year. However, Kane and colleagues (2013) were careful to note that non-random assignment of students to teachers, as is the case in classrooms across the US, may not allow for replicable identification of effective teachers using similar measures. Researchers discussed the danger of intervening student variables that cannot be controlled for or observed, noting that without random assignment of students to teachers, measuring effective teaching is compounded by student factors that are not visible to researchers.

Accompanying the strong body of research focusing on the validity of SGM as a measure of teacher quality (Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein; 2011; Hanushek & Rivkin, 2010; Kane, McCaffrey, Miller, & Staiger, 2013), another line of research focuses on the impacts these measures may have on teaching practice. Aside from the argument that SGM may not

accurately capture teacher quality, a growing number of researchers argue that the imposition of complicated external calculations of teacher quality induces negative feelings in many teachers, including fear, skepticism, and jealousy (Amrein-Beardsley, 2014; Baker et al., 2010). Though the initial intended consequence of SGM in teacher evaluation was to raise levels of teacher quality by rewarding teachers whose students were performing well and sanction those whose students were performing poorly, Amrein-Beardsley (2014) argued for a need to explore the unintended consequences of SGM, specifically VAM-based measures. These unintended consequences include overall lower levels of satisfaction with the profession, teachers refusing to teach standardized tested grades or subjects, teachers refusing to teach students whose performance may hinder SGM-based outcomes, or dissatisfied teachers leaving the profession entirely.

Prior to the rising popularity of SGM as a measure of teacher quality, the general impact of NCLB and high stakes testing were already negatively impacting many teachers' satisfaction with their work. Crocco and Costigan (2007) found strong connections between standardized testing and teachers' perceived job satisfaction. Interviews with over 200 beginning teachers identified what researchers termed the "shrinking space" (2007, p. 520) of teaching, where high-stakes testing has taken priority in public schools and now greatly influences pedagogical decisions. In addition to lower post-NCLB levels of teacher job satisfaction, teachers' perceived autonomy levels have also been impacted. A heavy emphasis on standardized testing has diminished their perceived levels of classroom autonomy. In a recent survey of 104 middle school teachers, 81% reported feeling they had less autonomy than in prior years (Huss & Eastep, 2011). These findings mirrored those of a survey of 216 Kentucky teachers, where the majority of those surveyed expressed that high-stakes tests narrowed their choice of instructional strategies and negatively influenced the curriculum, causing teachers to focus more on test-taking strategies and memorization of content (Faulkner & Cook, 2006).

Coupled with shifting perceptions the impact of standardized testing and SGM have on teachers pedagogical options, studies have shown that their perceptions of SGM tend to be overwhelmingly negative (Lee, 2011). An analysis of teacher responses (n = 293) to their publicly-released VAM ratings in California revealed, not surprisingly, that 75% of the teachers responding to their ratings felt that a test score is not an accurate measure of a student's learning, experiences, or outcomes. Teachers at all levels of performance noted that social and cultural constructs of students' lives, as well as the school and institutional contexts in which teachers' work, were ignored in the VAM model of evaluation. Teachers suggested other measures of evaluation, like classroom observations, parent feedback, student feedback and portfolios should be used to evaluate teacher effectiveness. A study of Chicago Public Schools' Recognizing Educators Advancing Chicago Students (REACH) evaluation reform initiative, that included SGM (Jiang, Sporte, & Luppescu, 2015), found that teachers were concerned about the fairness of the process when their evaluations relied too heavily on student growth. Furthermore, 47% of the teachers either disagreed or strongly disagreed that student performance should be the only measure of their effectiveness. In general, teachers commented that the SGM system increased their overall stress levels within the profession.

A more recent study, one of the first to directly explore the link between VAM evaluation scores and teacher job satisfaction, focused specifically on the impact of VAM ratings on teachers' job satisfaction post-NCLB (Koedel, Li, Springer, & Tan; 2017). Researchers found that across a state-wide sample of teachers in Tennessee (n = 13,266), teachers with higher VAM ratings reported higher levels of job satisfaction. However, the survey had a non-response rate of nearly two-thirds and one of the largest metropolitan districts in the state was omitted from the study due to its use of a different evaluation system than the rest of the state. Also, there was a large time gap between the measures used in the study. The evaluations that determined teachers' VAM scores used in the study's analysis were conducted in the 2011–12 school year, however, teachers did not receive their

VAM scores or take the job satisfaction survey until much later, some over a year later in the spring of 2013. Because of this, it is possible that the study's generally positive results of teachers' perceptions of satisfaction were influenced by the selection bias of teachers at the extremes of the VAM distribution who chose to complete the survey.

Method

Participants

The SASS Teacher Questionnaire is administered about every four years to a nationally representative sample of teachers. The questionnaire targets measuring teacher related elements such as teacher education and training, work environment factors, and perceptions about teaching and other school-level factors. The sample is taken from all elementary and secondary schools in the US (Institute for Education Sciences, National Center for Education Statistics, 2016). In order to minimize selection bias, the study's sample includes the full public teacher survey sample (n = 37,497), minus teachers who taught in overlapping grade bands (n = 5,777), resulting in a final analytic sample of 31,720 teachers. Because a teachers' grade band was included as a study predictor, teachers who indicated assignments including grade levels that overlapped between elementary (K–5), middle (6–8), and high school (9–12) grade levels were deleted in order to create a unique grade band identifier for each teacher. In addition, years teaching experience (less than 4 years, 4–9 years, 10–14 years, or more than 15 years) were categorized in accordance with categories used in the Institute for Education Science National Center for Education Statistics (NCES) *Digest of Education Statistics, 2014*.

The study's main predictors included state-level RTT status (RTT state or non-RTT state at the time of the survey) and teacher's SGM status (SGM or non-SGM). RTT status was determined using the ANSI state identifiers of Phase I and Phase II RTT states (Delaware, Tennessee, Massachusetts, New York, Hawaii, Florida, Rhode Island, District of Columbia, Maryland, Georgia, North Carolina, and Ohio). It is important to note that although 11 states and the District of Columbia received Phase I and II RTT funding by the time the 2011–12 SASS was administered (U.S. Department of Education, 2011), the majority of the awarded states were still in implementation phases of incorporating SGM into teacher evaluation at the time of the survey.

Teachers' SGM status (SGM or non-SGM) was determined using teachers' answers to two SASS questions regarding whether student test score outcomes or test score growth were included as an: a) evaluation criterion in a teacher's formal evaluation during the current school year, and/or b) whether a teacher would earn any additional compensation from their school system based on student performance. Teachers answering "yes" to one or both questions were coded as SGM participants. It was hypothesized that RTT status and teacher SGM status would result in lower levels of school-level influence, curricular and pedagogical autonomy, and job satisfaction. The study also examined the impact of school- and teacher-level demographic factors, such as school urbanicity and years of teaching experience, that have also been found to impact the dependent measures (Gius, 2015; Ingersoll & May, 2012; Sullivan et al., 2017).

Due to the nested nature of teachers within schools in the dataset and based on previous work with similar independent and dependent measures using the SASS, the study utilized hierarchical linear modeling to examine the proportion of variance in teachers' perceptions of their school-level influence, curricular and pedagogical autonomy, and job satisfaction across schools. Table 1 provides descriptive statistics of the school- and teacher-level predictors used for the study's sample. For reporting purposes, all unweighted sample sizes were rounded to the nearest 10 per IES restricted-use guidelines.

Table 1
Schools and Staffing Survey 2011–12 Sample Demographics – School- and Teacher-Level Predictors

	Teachers	
	Number	%
School-level Predictors		
RTT status		
RTT state	6,280	20.4
Non-RTT state	24,450	79.6
School urbanicity		
City	7, 280	23.0
Suburb	9,280	29.2
Town	5,290	16.7
Rural	9,870	31.1
School teacher and student characteristics	*M*	*SD*
% Minority Teachers	12.7	19.5
%Minority Students	40.5	33.3
Teacher Base Salary	$50,217.28	$15,846.49
Teacher-level Predictors		
	Number	%
SGM status		
SGM	14,020	44.2
Non-SGM	17,700	55.8
Grade band		
Elementary (K–5)	6,710	21.2
Middle (6–8)	10,180	32.1
High (9–12)	14,654	46.2
Years Teaching Experience		
Less than 4 years	4,810	15.2
4–9 years	8,620	27.2
10–14 years	6,110	19.27
More than 15 years	12,190	38.4
	M	*SD*
Teacher Base Salary	$50,217.28	$15,846.49

Source. Teacher Questionnaire Schools and Staffing Survey 2011–12 School year.

Data Analysis

The four dependent variables were measured using items from the school climate and teacher attitudes section of the SASS Teacher Questionnaire. Principal-components factor analyses with Varimax rotation were conducted on 20 items from the questionnaire addressing teachers' perceptions of school (items 61a – g) and classroom-level (items 62 a – f) control and general satisfaction with teaching (items 65 a – g). All items were measured on a 4-point Likert-type scale. Eigenvalues greater than 1.00 were used to determine the number of factors, with each item's highest factor loading determining its scale. Cronbach's alpha was calculated to determine the internal consistency of the items composing each scale. The results of the factor analysis revealed four factors with eigenvalues greater than 1.00, accounting for 55.1% of the total variance. The four extracted factors used as dependent variables are shown in Tables 2 – 5. Due to similar loadings

across all factors, a factor-based composite mean score was calculated for the items in each scale for further analysis. Reliability for each scale ranged from .73 to .82, and each individual factor's reliability is provided. Inter-scale correlation coefficients were calculated and all scales had small to moderate, positive significant correlations. This finding is similar to findings from recent studies linking teacher perceptions of aspects of their work environment to job satisfaction (Aldridge & Fraser, 2016; Johnson, Kraft, & Papay, 2012).

Table 2
School-level Influence Items and Factor Loadings

School-level influence variable	Factor Loadings
Setting performance standards for students at this school	0.561
Determining the content of in-service professional development programs	0.653
Evaluating teachers	0.697
Hiring new full-time teachers	0.655
Setting discipline policy	0.718
Deciding how the school budget will be spent	0.682
Eigenvalue	2.24
Cronbach's alpha reliability	0.795

Table 3
Curricular Influence Items and Factor Loadings

Curricular Influence variable	Factor Loadings
Establishing curriculum	0.619
Selecting textbooks and other instructional materials	0.692
Selecting content, topics, and skills to be taught	0.749
Eigenvalue	1.16
Cronbach's alpha reliability	0.732

Table 4
Pedagogical Influence Items and Factor Loadings

Pedagogical influence variable	Factor Loadings
Selecting teaching techniques	0.682
Evaluating and grading students	0.757
Disciplining students	0.696
Determining the amount of homework to be assigned	0.746
Eigenvalue	2.04
Cronbach's alpha reliability	0.763

Table 5
Job Satisfaction Items and Factor Loadings

Job satisfaction variable	Factor Loadings
The teachers at this school like being here; I would describe us as a satisfied group.*	0.682
I like the way things are run at this school.*	0.757
The stress and disappointments involved in teaching at this school aren't really worth it.	0.745
If I could get a higher paying job I'd leave teaching as soon as possible.	0.746
I think about transferring to another school.	
I don't have as much enthusiasm now as I did when I began teaching.	
Eigenvalue	5.65
Cronbach's alpha reliability	0.822

Source. Schools and Staffing Survey- Teacher Questionnaire 2011–12 School Year.
*Due to the nature of the Likert scale (1 = strongly agree to 4 = strongly disagree), positively worded items for this scale were reverse-coded such that a high score across all items would indicate a high degree of satisfaction.

Models

Two-level hierarchical linear modeling with random intercepts utilized for all dependent measures. The cluster identifier was each school's control number for SASS administration (CNTLNUMS). There were a total of 7,533 clusters with between 1 and 17 teachers per cluster in the overall sample. In each model, the slopes of both school- and teacher-level predictors were held constant, while the intercepts were allowed to vary across schools and teachers. The teacher-level predictors utilized across all models included $\beta_{01}Elementary_{ij}$ = dichotomous variable indicating if a teacher taught in grades K–5; $\beta_{11}Middle_{ij}$ = dichotomous variable indicating if a teacher taught in grades K–5; $\beta_{12}High_{ij}$ = dichotomous variable indicating if a teacher taught in grades 9–12; $\beta_{13}YearsExperience_{ij}$ = years of teaching experience (less than five years, 5–9 years, 10–14 years, 15 years or more, with less than five years as the reference group in all models); $\beta_{14}TeacherBaseSalary$ = each teacher's annual base salary; and $\beta_{15}SGMStatus_{ij}$ = dichotomous variable indicating whether

student scores or score growth were used in a teacher's evaluation or compensation.

School-level predictors utilized in each model included γ_{01} *RTTstate* = dichotomous variable indicating whether a school was located in a Phase I or II Race to the Top state; γ_{12} *PercentMinorityTeachers* = total percentage of minority teachers at the school; γ_{13}*PercentMinorityStudents* = total percentage of minority students at the school; and γ_{15}*SchoolUrbanicity* = urban designation for the school (collapsed into city, suburb, town, or rural, with rural as the reference group in final models). For each model, both variation across clusters (U_{0j}), and variation within schools (e_{ij}) were included. Table 6 shows the null and final models used in the study's analysis.

Table 6
Two-level Hierarchical Linear Models for Dependent Measures

Dependent Measure	Model
School-level Influence	Null Model $SchoolInfluence_{ij} = \gamma_{00} + U_{0j} + e_{ij}$ Two-level Model: $SchoolInfluence_{ij} = \beta_{01} + \beta_{10}Elementary_{ij} + \beta_{11}Middle_{ij} + \beta_{12}High_{ij} + \beta_{13}YearsExperience_{ij} + \beta_{14}BaseSalary_{ij} + \beta_{15}SGMStatus_{ij} + \gamma_{01}$ *RTTstate* + γ_{12} *PercentMinorityTeachers* + γ_{13}*PercentMinorityStudents* + γ_{15}*SchoolUrbanicity* + $U_{0j} + e_{ij}$
Curricular Autonomy	Null Model $CurricularAutonomy_{ij} = \gamma_{00} + U_{0j} + e_{ij}$ Two-level Model: $CurricularAutonomy_{ij} = \beta_{01} + \beta_{10}Elementary_{ij} + \beta_{11}Middle_{ij} + \beta_{12}High_{ij} + \beta_{13}YearsExperience_{ij} + \beta_{14}BaseSalary_{ij} + \beta_{15}SGMStatus_{ij} + \gamma_{01}$ *RTTstate* + γ_{12} *PercentMinorityTeachers* + γ_{13}*PercentMinorityStudents* + γ_{15}*SchoolUrbanicity* + $U_{0j} + e_{ij}$
Pedagogical Autonomy	Null Model: $PedagogicalAutonomy_{ij} = \gamma_{00} + U_{0j} + e_{ij}$ Two-level Model: $PedagogicalAutonomy_{ij} = \beta_{01} + \beta_{10}Elementary_{ij} + \beta_{11}Middle_{ij} + \beta_{12}High_{ij} + \beta_{13}YearsExperience_{ij} + \beta_{14}BaseSalary_{ij} + \beta_{15}SGMStatus_{ij} + \gamma_{01}$ *RTTstate* + γ_{12} *PercentMinorityTeachers* + γ_{13}*PercentMinorityStudents* + γ_{15}*SchoolUrbanicity* + $U_{0j} + e_{ij}$
Job Satisfaction	Null Model $JobSatisfaction_{ij} = \gamma_{00} + U_{0j} + e_{ij}$ Two-level Model: $JobSatisfaction_{ij} = \beta_{01} + \beta_{10}Elementary_{ij} + \beta_{11}Middle_{ij} + \beta_{12}High_{ij} + \beta_{13}YearsExperience_{ij} + \beta_{14}BaseSalary_{ij} + \beta_{15}SGMStatus_{ij} + \gamma_{01}$ *RTTstate* + γ_{12} *PercentMinorityTeachers* + γ_{13}*PercentMinorityStudents* + γ_{15}*SchoolUrbanicity* + $U_{0j} + e_{ij}$

Results

In order to determine the extent to which teacher perceptions of school-level influence, curricular and pedagogical autonomy, and job satisfaction were attributable to differences across schools, intra-class correlation coefficients (ICCs) were calculated for each dependent measure. The ICCs of the four scales ranged from 10.9% - 26.4%, with just over 10% (10.9%) of the variance in teachers' perceptions of pedagogical autonomy explained by differences across schools and over 26% (26.4%) of the variance in teachers' perceptions of their influence over choosing curricular for their classroom explained by differences across schools. Differences across schools explained 15.7% of the variance in teachers' perceptions of job satisfaction and 16.3% of the variance in their perceptions of school-level influence. For each null model, variance across schools explained a statistically significant portion of the variance.

School-level Influence

The random intercept model for teachers' perceptions of school-level influence with school- and teacher-level predictors was statistically significantly better than the null model ($\chi^2 = 478.02$, $p < .001$), indicating the school- and teacher-level predictors explained a significant, though small, portion of the variance in teacher perceptions of school-level influence across schools. The school-level and teacher-level predictors explain 0.7% of the variance in teachers' perceptions of school-level influence. The average school-level influence score in the study's sample was 2.08 on a 4-point Likert scale, with 1 = no influence to 4 = a great deal of influence. With regard to the main predictors of interest, teachers in Race to the Top states had a school-level influence scale score of 0.1 points lower on average that teachers in non-RTTT states. There were no significant differences in the SGM predictor at the teacher level.

Regarding other school- and teacher-level predictors, as the percentage of minority students in a school increased, teachers' perceptions of their school-level influence decreased by .001 points on average. In cities, teachers' perceptions of their school-level influence were .02 points higher than teachers in rural locales on average. There were no other significant school-level differences. At the teacher-level, teachers with 10-14 and more than 15 years of experience had higher perceptions of school-level influence, on average, than teachers with less than five years of experience. Teachers with 10-14 of teaching experience had a school-level influence score that was 0.04 points higher on average that teachers with less than five years of experience, while teachers with 15 or more years of experiences had a school-level influence score that was 0.17 points higher on average than teachers with less than five years of experience. There were no other significant teacher-level differences in perceptions of school-level influence. Table 7 provides the random intercept model results for teachers' perceptions of school-level influence.

Table 7
Results for Random-Intercept Model – School-level Influence

Parameters	Coefficient	S.E.	z	p
Fixed				
γ_{00}	2.11	0.051	41.23	<.001**
School-level predictors				
γ_{01} *RTTstate*	-0.075	0.011	-6.68	<.001**
γ_{11}*PercentMinorityTeachers*	-0.000	0.000	-2.35	0.201
γ_{13}*PercentMinorityStudents*	-0.001	-.000	-7.83	<.001**
γ_{15}*SchoolUrbanicityTown*	-0.010	0.013	-0.74	0.458
γ_{15}*SchoolUrbanicitySuburb*	-0.006	0.012	00.43	0.666
γ_{15}*SchoolUrbanicityCity*	0.029	0.013	2.20	0.028*
Teacher-level predictors				
β_{10}*Elementary*$_{ij}$	0.018	0.050	0.36	0.717
β_{11}*Middle*$_{ij}$	-0.011	.050	-0.21	0.831
β_{12}*High*$_{ij}$	-0.009	.050	-0.18	0.857
β_{13}*YearsExperience5-9Years*$_{ij}$	-0.009	0.009	-0.94	0.347
β_{13}*YearsExperience10-14Years*$_{ij}$	0.038	0.009	4.52	< .001**
β_{13}*YearsExperienceMorethan15*$_{ij}$	0.174	0.010	16.83	< .001**
β_{14}*BaseSalary*$_{ij}$	-5.01e-07	2.90e-07	-1.73	0.084
β_{15}*SGMStatus*$_{ij}$	0.006	0.007	0.80	0.426
Random			95% Confidence Interval	
			Lower	Upper
σ_e^2	0.061	0.002	0.056	0.066
σ_{II}^2	0.327	0.003	0.322	0.333

Note: * $p < 0.05$, ** $p < 0.01$

Curricular Autonomy

The random intercept model for teachers' perceptions of curricular autonomy with school- and teacher-level predictors was statistically significantly better than the null model ($\chi^2 = 1648.42$, $p < .001$), indicating the school- and teacher-level predictors explained a significant, though small, portion of the variance in teacher perceptions of school-level influence across schools. The school-level and teacher-level predictors explained 6.9% of the variance in teachers' perceptions of curricular autonomy. The average curricular autonomy score in the study's sample was 2.79 on a 4-point Likert scale, with 1 = no influence to 4 = a great deal of influence. With regard to the main predictors of interest, teachers in Race to the Top states had a curricular autonomy scale score of 0.14 points lower on average that teachers in non-RTTT states. Teachers for whom SGM were a component of their evaluation and/or compensation had a curricular autonomy score of 0.06 points lower on average than teachers for whom SGM were not a component of evaluation or compensation.

Regarding other school- and teacher-level predictors, as the percentage of minority students in a school increased, as the percentage of minority students in a school increased, teachers' perceptions of their curricular autonomy decreased by .002 points on average. Similarly, as the percentage of minority students increased in a school, teachers' perceptions of their curricular autonomy decreased by .002 points on average. In schools located in suburbs, teachers' perceptions of their curricular autonomy were .11 points lower than teachers in rural locales on average. In addition, teachers whose schools were located in cities had curricular autonomy scores that were .13 points lower than teachers in rural locales on average. There were no other significant school-level differences. At the teacher level, teachers with 5-9 years of experience had lower perceptions of curricular autonomy than teachers with less than five years of experience, with a curricular autonomy score of 0.02 points lower on average. Elementary and middle school teachers had lower curricular autonomy scores than the overall sample of teachers. Elementary teachers' curricular autonomy scores were 0.55 points lower on average, while middle school teachers' curricular autonomy scores were 0.35 points lower on average. There were no other significant teacher-level differences in perceptions of school-level influence. Table 8 provides the random intercept model results for teachers' perceptions of school-level influence.

Table 8
Results for Random-Intercept Model – Curricular Autonomy

Parameters	Coefficient	S.E.	z	p
Fixed				
γ_{00}	2.79	0.007	423.07	<.001**
School-level predictors				
γ_{01} *RTTstate*	-0.150	0.015	10.01	<.001**
γ_{11}*PercentMinorityTeachers*	-0.002	0.000	-5.46	<0.001**
γ_{13}*PercentMinorityStudents*	0.002	-.000	10.20	<.001**
γ_{15}*SchoolUrbanicityTown*	0.023	0.018	1.33	0.184
γ_{15}*SchoolUrbanicitySuburb*	-0.109	0.016	07.00	<.001**
γ_{15}*SchoolUrbanicityCity*	0.029	0.013	2.20	0.028*
Teacher-level predictors				
β_{10}*Elementary*$_{ij}$	0.018	0.050	0.36	0.717
β_{11}*Middle*$_{ij}$	-0.011	.050	-0.21	0.831
β_{12}*High*$_{ij}$	-0.009	.050	-0.18	0.857
β_{13}*YearsExperience5-9Years*$_{ij}$	-0.025	0.012	-2.13	0.033*
β_{13}*YearsExperience10-14Years*$_{ij}$	-0.006	0.011	00.57	.565
β_{13}*YearsExperienceMorethan15*$_{ij}$	0.001	0.013	0.04	.966
β_{14}*BaseSalary*$_{ij}$	6.18e-07	3.69e-07	1.67	0.095
β_{15}*SGMStatus*$_{ij}$	-0.055	0.009	-6.15	<.001**
Random			95% Confidence Interval	
			Lower	Upper
σ_e^2	0.121	0.004	0.113	0.130
σ_{II}^2	0.498	0.004	0.490	0.507

Note: * $p < 0.05$, ** $p < 0.01$

Pedagogical Autonomy

The random intercept model for teachers' perceptions of pedagogical autonomy with school- and teacher-level predictors was statistically significantly better than the null model (χ^2 = 586.14, $p < .001$), indicating the school- and teacher-level predictors explained a significant, though small, portion of the variance in teacher perceptions of school-level influence across schools. The school-level and teacher-level predictors explained 1.7% of the variance in teachers' perceptions of pedagogical autonomy. The pedagogical autonomy score in the study's sample was quite high, with an average of 3.57 on a 4-point Likert scale, with 1 = no influence to 4 = a great deal of influence. With regard to the main predictors of interest, teachers in Race to the Top states had a pedagogical autonomy scale score of 0.04 points lower on average than teachers in non-RTTT states. Teachers for whom SGM were a component of their evaluation and/or compensation had a curricular autonomy score of 0.05 points lower on average than teachers for whom SGM were not a component of evaluation or compensation.

Regarding other school- and teacher-level predictors, As the percentage of minority teachers in a school increased, teachers' perceptions of their pedagogical autonomy decreased by .001 points on average. Similarly, as the percentage of minority students increased in a school, teachers' perceptions of their pedagogical autonomy decreased by .001 points on average. I n schools located in cities and suburbs, teachers' perceptions of their school-level influence were .02 points lower than teachers in rural locales on average. There were no other significant school-level differences. At the teacher-level, teachers with 10-14 and more than 15 years of experience had higher perceptions of pedagogical autonomy, on average, than teachers with less than five years of experience. Teachers with 10-14 of teaching experience had a pedagogical autonomy score that was 0.01 points higher on average, while teachers with 15 or more years of experience had a pedagogical autonomy score that is 0.03 points higher on average. Middle school teachers had a pedagogical autonomy score that was 0.10 points higher on average, while high school teachers' perceptions of their pedagogical autonomy were 0.12 points higher on average. There were no other significant teacher-level differences in perceptions of pedagogical autonomy. Table 9 provides the random intercept model results for teachers' perceptions of pedagogical autonomy.

Table 9
Results for Random-Intercept Model – Pedagogical Autonomy

Parameters	Coefficient	S.E.	z	p
Fixed				
γ_{00}	3.57	0.003	1038.94	<.001**
School-level predictors				
γ_{01} *RTTstate*	-0.042	0.008	-5.03	<.001**
γ_{11}*PercentMinorityTeachers*	-0.001	0.000	-4.31	<0.001**
γ_{13}*PercentMinorityStudents*	-0.001	-.000	-9.50	<.001**
γ_{15}*SchoolUrbanicityTown*	-0.009	0.010	-0.94	0.345
γ_{15}*SchoolUrbanicitySuburb*	-0.109	0.016	7.00	<.001**
γ_{15}*SchoolUrbanicityCity*	-0.023	0.010	-2.36	0.018*
Teacher-level predictors				
β_{10}*Elementary*$_{ij}$	0.018	0.050	0.36	0.717
β_{11}*Middle*$_{ij}$	-0.011	.050	-0.21	0.831
β_{12}*High*$_{ij}$	-0.009	.050	-0.18	0.857
β_{13}*YearsExperience5-9Years*$_{ij}$	-0.004	0.008	-0.53	0.599
β_{13}*YearsExperience10-14Years*$_{ij}$	0.015	0.007	2.08	0.037*
β_{13}*YearsExperienceMorethan15*$_{ij}$	0.034	0.009	3.97	<.001**
β_{14}*BaseSalary*$_{ij}$	1.28e-07	2.30e-07	0.56	0.578
β_{15}*SGMStatus*$_{ij}$	-0.052	0.006	-9.02	<.001**
Random			95% Confidence Interval	
			Lower	Upper
σ_e^2	0.023	0.001	0.020	0.256
σ_{II}^2	0.227	0.002	0.223	0.231

Note: * $p < 0.05$, ** $p < 0.01$

Job Satisfaction

The random intercept model for teachers' perceptions of job satisfaction with school- and teacher-level predictors was statistically significantly better than the null model ($\chi^2 = 701.97$, $p < .001$), indicating the school- and teacher-level predictors explained a significant, though small, portion of the variance in teacher perceptions of school-level influence across schools. The school-level and teacher-level predictors explained 2% of the variance in teachers' perceptions of pedagogical autonomy. The job satisfaction score in the study's sample was also relatively high, with an average of 3.05 on a 4-point Likert scale, with 1 = strongly agree to 4 = strongly disagree. The majority of the items were negatively worded, therefore a high score on the job satisfaction scale indicated disagreement with negative items such as, "If I could get a higher paying job, I'd leave teaching as soon as possible." Therefore, the two positively-worded items in the scale ("I like the way things are run at this school," and "The teachers at this school like being here; I would describe us as a satisfied group.") were reverse-coded in order for a high score across all items to indicate a high degree of satisfaction. With regard to the main predictors of interest, the job satisfaction scale was the only outcome on which there were no statistically significant differences in teachers in Race to the Top and non-Race to the Top states. However, teachers for whom SGM were a component of their evaluation and/or compensation had a job satisfaction score of 0.04 points lower on average than teachers for whom SGM were not a component of evaluation or compensation. This seemingly contradictory finding could be explained by the fact that not all RTTT states had fully implemented SGM-based evaluation systems at the time of the survey and also by the fact that individual school districts in some non-RTT states, such as Houston ISD, were using SGM-based evaluation models at the time of the survey.

Regarding other school- and teacher-level predictors, as the percentage of minority teachers in a school increased, teachers' perceptions of their job satisfaction decreased by .002 points on average. Similarly, as the percentage of minority students increased in a school, teachers' perceptions of their job satisfaction decreased by .002 points on average. In schools located in suburbs, teachers' perceptions of their job satisfaction were 0.09 points higher on average than teachers in rural locales. There were no other significant school-level differences. At the teacher-level, teachers with 5–9 years of experience had lower perceptions of job satisfaction, with a curricular autonomy score of 0.06 points lower on average than teachers with less than five years of experience. In addition, teachers with 10–14 years of teaching experience also had a job satisfaction score that was 0.06 points lower on average than teachers with less than five years of experience. However, conversely, teachers with 15 or more years of experiences had a job satisfaction score that was 0.06 points higher on average than teachers with less than five years of experience. Finally, a teachers' annual base salary was a significant, but marginal, predictor of teachers' job satisfaction, resulting in less than a 0.01 point change in teachers' job satisfaction on average. Table 10 provides the random intercept model results for teachers' perceptions of job satisfaction.

Table 10
Results for Random-Intercept Model – Job Satisfaction

Parameters	Coefficient	S.E.	z	p
Fixed				
γ_{00}	3.05	0.005	650.25	<.001**
School-level predictors				
γ_{01} *RTTstate*	-0.010	0.011	-0.90	0.365
γ_{11}*PercentMinorityTeachers*	-0.002	0.000	-6.94	<0.001**
γ_{13}*PercentMinorityStudents*	-0.002	-.000	10.85	<.001**
γ_{15}*SchoolUrbanicityTown*	-0.009	0.014	-0.66	0.512
γ_{15}*SchoolUrbanicitySuburb*	0.086	0.012	7.23	<.001**
γ_{15}*SchoolUrbanicityCity*	0.009	0.013	0.71	0.481
Teacher-level predictors				
β_{10}*Elementary*$_{ij}$	-0.026	0.052	-0.50	0.618
β_{11}*Middle*$_{ij}$	-0.082	.052	-1.60	0.110
β_{12}*High*$_{ij}$	-0.083	.051	-1.62	0.105
β_{13}*YearsExperience5-9Years*$_{ij}$	-0.059	0.010	-6.04	<.001**
β_{13}*YearsExperience10-14Years*$_{ij}$	0.060	0.009	-6.71	<.001**
β_{13}*YearsExperienceMorethan15*$_{ij}$	0.063	0.011	5.86	<.001**
β_{14}*BaseSalary*$_{ij}$	2.34e-07	2.99e-07	7.83	<.001**
β_{15}*SGMStatus*$_{ij}$	-0.045	0.007	-6.00	<.001**
Random			95% Confidence Interval	
			Lower	Upper
σ_e^2	0.057	0.002	0.052	0.062
σ_{II}^2	0.355	0.003	0.349	0.362

Note: * $p < 0.05$, ** $p < 0.01$

Discussion

As the debate regarding the best way to measure high quality teaching persists, so do teacher shortages in key areas and the attrition of teachers from the profession. At the beginning of the 2015–16 school year, 42 states and the District of Columbia reported teacher shortages in math, with 40 states reporting shortages in science (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). In addition, recent estimates show that between 19% and 30% of teachers leave the classroom within their first five years in the profession, with math and science teachers leaving at higher rates than general elementary and humanities teachers (Sutcher et al, 2016). With teacher shortages across the country, policy makers cannot afford to continue to ignore the potential negative impacts of SGM-focused teacher evaluation and compensation structures on factors such as school-level influence, curricular and pedagogical autonomy, and job satisfaction, that contribute greatly to whether teachers choose to remain in teaching.

The current study's findings suggest that there were statistically significantly yet small, negative correlations between teaching in a RTTT Phase I or II state at the time of the survey and teachers' perceptions of their school-level influence, curricular autonomy, and pedagogical autonomy. There were no significant differences in teachers' job satisfaction in RTTT and non-RTTT states. The use of SGM measures in teacher evaluation, compensation, or both, statistically significantly negatively predicted both teachers' pedagogical and curricular autonomy, as well as job satisfaction. These findings are consistent with previous studies that found teachers' classroom autonomy and job satisfaction to be lessened post-NCLB (Crocco & Costigan, 2007; Faulker & Cook, 2006; Huss & Eastep, 2011). However, the small amount of variance explained in the current study may also indicate, consistent with the findings of a recent longitudinal study of the impact of NCLB on similar dependent variables (Grissom, Nicholson-Crotty, & Harrington, 2014), that though NCLB policies, such as SGM, result in differences in teachers' perceptions of their work, such measures do not explain much of the variance in teachers' in job-related perceptual outcomes.

In addition to the differences in the outcomes of interest, teachers' perceived levels of job satisfaction, autonomy, and school-level influence appear to also be impacted by years of teaching experience. Specifically, teachers with 5–9 years of experience had lower curricular autonomy and job satisfaction than teachers with less than five years of experience. Conversely, however, teachers with 10–14 years of experience had higher school influence and pedagogical autonomy scores than teachers with less than 5 years of experience, on average. Teachers with 15 or more years of teaching experience also had higher than average scores for school-level influence, pedagogical autonomy, and job satisfaction. The difference in teachers with 5–9 years of experience is similar to recent study findings that many mid-career teachers tend to have more negative views of teaching than peers with more or less experience due to what some have called a "mid-career slump" resulting from a lack of opportunities for professional growth and stagnant salaries relative to new teachers (Boser & Strauss, 2014; Doan & Peters, 2009; Howes & Goodman-Delahunty, 2015).

Finally, though grade band and base salary had little to no influence on any of the study's outcomes, several school-level predictors significantly predicted one or more study outcomes. A school's percentage of minority teachers significantly and negatively impacted teachers' perceptions of their curricular autonomy, pedagogical autonomy, and job satisfaction, while percentages of minority students significantly and negatively predicted all four outcome measures. These findings are consistent with recent studies showing lower overall levels of job satisfaction and autonomy of minority teachers (Master, Sun, & Loeb, 2016; Moore, 2012). Finally, urbanicity levels for towns, suburbs, and cities were found to significantly negatively predict teachers perceived levels of school influence compared to rural teachers. The differences with regard to rural teachers mirror previous

findings with SASS data (U. S. Department of Education, 1997) that found rural teachers to have greater overall commitment to teaching than teachers in other areas. In addition, being a suburban teacher significantly and negatively predicted teacher perceptions on the remaining outcomes of curricular and pedagogical autonomy and job satisfaction. In contrast to differences between rural and suburban teachers, teaching in an urban environment significantly and positively predicted teachers' perceptions of school-level influence and curricular autonomy, but significantly negatively predicted teachers' perceptions of pedagogical autonomy.

Study Limitations

This study, though important in its examination of how early RTTT and RTTT-related teacher evaluation and compensation policies may have impacted teachers' perceptions of their work life, has several limitations. The study's greatest limitation is that the 2011–12 SASS survey was given at a time when the majority of RTTT Phase I and II states were still piloting their SGM-based evaluation systems. As a result of this early implementation and due to the fact that SASS did not directly ask participants what type of student growth measure was used in their evaluation or compensation, the SGM measure may be a weak indicator of how student growth measures were functioning in an overall evaluation system. In addition, the present study did not directly explore the relationship between the outcomes. It is possible that one or more of the predictors functions as a moderator of another predictor. For example, it is possible that curricular and pedagogical autonomy explain part of the variance in job satisfaction and perceptions of school-level influence.

Implications for Further Research

This study examined the unintended consequences of early RTTT and SGM measures through an investigation of K–12 teachers' perceptions of school-level influence, pedagogical and curricular autonomy, and job satisfaction. The study's findings add to a growing understanding of how education reforms focusing on teacher evaluation systems may negatively impact teacher perceptions of their work environments. The current study presents several opportunities for future research. First, it would be beneficial to repeat the study with a smaller sample size, perhaps looking at the differential impacts of SGM within the elementary spectrum or between schools of differing types. Small to negligible coefficients for all statistically significant relationships suggest that there is a combination of variables that could be included with RTTT status and SGM to better explain impacts on teachers' perceptions of school-level influence, pedagogical and curricular autonomy, and job satisfaction. For example, RTT funds and NCLB sanctions impacted Title I funding, therefore it would be interesting to see if SGM-related evaluation systems differentially effected Title I schools or teachers of tested subjects. Secondly, due to the fact that the 2011–12 SASS survey was given at a time when most RTTT states were still in the pilot phases of their new teacher evaluation systems (Collins & Amrein-Beardsley, 2014), the use of SGM in teacher evaluation and compensation were in their infancy at the time of the 2011–12 SASS survey. As states continue to use and adopt SGM-based measures, it would be useful to repeat this study with the redesigned version of the SASS, the *National Teacher and Principal Survey*, that was administered in 2015–16. This more recent data would contain teachers who were potentially impacted by multiple years of SGM-based evaluation and compensation systems and would also include later phases of RTTT Phase I and II states, as well as subsequent RTTT states.

A final implication for future research would be to include other SASS surveys, such as the school and principal-level surveys, as well as the *Teacher Follow-up Survey,* in a further analysis of

teachers' perceived influence, autonomy, and job satisfaction. These additional sources of information could provide a more complete picture of factors that impact influence, autonomy, and job satisfaction, as well as what types of evaluation models contribute to higher levels of perceived influence, satisfaction, and autonomy at the school and classroom levels. For example, variables on the principal-level and *Teacher Follow-up Survey* could provide indicators of levels of school trust, which has been shown to be a critical variable associated with successful school reform efforts (Bryk & Schneider, 2002).

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