Examining Teacher Support for Grading Equity

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Traditional grading methods have faced criticism for potentially exacerbating educational disparities, leading to the proposal of grading equity practices as a remedy (Feldman, 2019). We conducted an analysis with survey data from 506 Arkansas public school teachers, utilizing an Ordinary Least Squares (OSL) regression. Our findings illuminate key determinants of support for grading equity practices. Liberal and moderate-leaning teachers are more likely to favor grading equity, in contrast with their conservative counterparts. Additionally, elementary-level teachers, core and programmatic teachers, and educators with advanced degrees demonstrated heightened support for equitable grading. Personal responsibility levels and years of teaching experience do not significantly associate with support. This research contributes to the discourse on equitable grading, offering valuable insights and directions for future studies.

Literature Review

History of Grading

Grading holds a foundational role in students' educational journey as a fundamental aspect of the "grammar" of mass schooling (Tyack & Cuban, 1995). Remarkably, grading practices have changed very little in the last century (Schneider & Hutt, 2013). Rooted in the necessities of the early 20th-century U.S. educational landscape, schools institutionalized grading practices for an increasingly large, diverse, and urbanized student population (Schneider & Hutt, 2013). These now traditional practices included homework completion, class participation, assignment punctuality, behavioral assessment, limited retake allowances, extra credit opportunities, grade averaging, grade weighting, and the inclusion of student effort (Guskey, 2020). Regarded as a "hodgepodge" grade by researchers (Brookhart, 1991), the final grade is a confusing union of multiple different components (Cross & Frary, 1999), indicating the need for reform.

In the 1950s-60s, grading's pivotal role in the broader standardization of schooling facilitated mass education with more uniform cultures across the country, sorting students into vocational and academic tracks (Hess, 2010; Labaree, 2004, 2012; Tyack & Cuban, 1995). Rooted in an era where societal norms perceived an ability bell curve and conducted schooling through extrinsic reinforcement and punitive measures, traditional grading encapsulated dominant beliefs (Feldman, 2019; Labaree, 2012). This traditional grade utilized by teachers has been found to fail economically disadvantaged students twice as often as their more advantaged peers, even after accounting for similar academic abilities (Morris & McKenzie, 2022). Modern grading researchers have fought against these inequities and tried to reform grading.

Grades profoundly influence students' lives, influencing college admissions, scholarships, grade-point average (GPA) rankings, and retention (Guskey, 2015; Morris et al., 2021). Yet whether traditional grading reflects students' comprehension of content standards is uncertain (Kunnath, 2017). Grading reform researcher Guskey (2022) argues that clarifying the meaning of grades could enhance both student learning and equity. Accordingly, many schools are shifting to "standards-based grading" (SBG), a grading framework of evaluating students solely based on their mastery of content (Link & Guskey, 2022). While empirical causal studies on the effectiveness of SBG remain scarce, proponents suggest its potential to increase student motivation and reduce teachers' grading burden (Brookhart & Guskey, 2019). Within this SBG approach is the concept of equitable grading practices by Joe Feldman (2019), another framework in grading reform.

Equity-Based Grading Practices

In *Grading for Equity*, Feldman (2019) presents the chief argument for equity-based grading practices, urging educators to reconsider prevailing traditional grading approaches that can inadvertently favor privileged students while disadvantaging marginalized ones. This includes students of color, those from low-income households, individuals receiving special education services, and English Language Learners. Some students receive far more academic support from their families than others (Demerath, 2009; Milner, 2023). Feldman emphasizes that the purpose of grading should be to foster learning, study agency, and ownership. Rather than solely assessing students' efforts, grades should indicate their understanding—measuring comprehension rather than task completion.

Feldman's (2019, p. 241) vision of grading equity encompasses several key components:

- All assignments, assessments, and final grades are on the 0-4 scale or 50-100-point scale, incorporating the 'minimum grade' concept, allowing students with failing grades an opportunity to recover.

- Elimination of extra credit options to avoid favoring students with more resources or time.

- Grades are unaffected by late submissions, acknowledging individual student circumstances.

- Provision of retakes for students who demonstrate improved understanding after receiving support. These retake scores replace prior scores to encourage ongoing learning.

- Summative assessments are heavily weighted, comprising 90-100 percent of a student's grade, thus reflecting their overall learning achievements.

- The explicit linkage of all assignments to specific standards reduces variation across instructors and provides a consistent framework for students.

- Excluding non-academic factors (e.g., participation, attendance, behavior) from grading, mitigating the influence of cultural biases.

- Omission of homework grades, recognizing the diversity of student home environments.

While some of these practices might appear unconventional, Feldman highlights their successful implementation for students and educators. He notes that after equitable-grading practices had been implemented, an independent evaluation firm reported positive shifts in student attitudes and behaviors, resulting in decreased course failures, reduced grade inflation (the upward trend in students' grades over time), and narrowed achievement gaps (Feldman, 2019). No other studies, however, have been produced to replicate or confirm these findings.

Feldman (2019) argues that schools can curb grading inflation by decoupling grades from behavioral indicators and focusing solely on content mastery. Conversely, schools adhering to traditional grading without equity considerations risk undermining growth mindsets (Dweck, 2006), potentially rendering low initial grades on a 100-point scale insurmountable. Guskey and Jung (2009) also caution against using low grades as punitive measures, as they alienate students and diminish effort.

Minimum grading, an equitable grading approach anchoring the 0-100-point scale at 50, offers a starting point for schools seeking equitable practices. Long's (2017) qualitative study of a low-achieving school in Southern Nevada reveals administrators' preference for the minimum grade. Carifio and Carey (2012) further suggest that the minimum grade strategy mitigates the impact of catastrophic failures, particularly benefiting disadvantaged students facing disruptions beyond school hours. However, concerns persist among teachers, including worries that equitable practices such as the minimum grade might compromise student agency, accountability, and the provision of comprehensive performance information (Long, 2017). Teachers' perspectives on equitable grading practices lessening students' agency and accountability may be due to their valuing personal responsibility.

Personal Responsibility

Teachers value responsibility and teaching their students to value real-world demands (Chen & Bonner, 2017). Teachers who value personal responsibility might oppose equity-based grading practices, perceiving the practices as encouraging minimal effort and undermining rewards for hard work which penalizes students who do work hard. Grading equity practices may conflict with values, including personal responsibility, the willingness to accept social norms, and avoiding blaming others for individual failures (Haskins, 2009). Libertarians and

conservatives believe policymakers should only adopt policies encouraging individuals to take responsibility for their misfortunes (Preiss, 2016). On the other hand, progressive-minded individuals believe that success or failure in life is often the result of large forces beyond individuals' control (Stonecash & Brewer, 2015). These large forces can interfere with the lives of disadvantaged students, impacting their ability to perform on non-content-specific yet academic-enabling behaviors (Feldman, 2019). The nuance of teachers' levels of personal responsibility and valuing real-world demands may affect how they grade their students (Chen & Bonner, 2017).

Arslan and Wong (2022, p. 5) developed a scale to measure levels of personal responsibility using four traits:

- I discipline myself to make the best use of my time doing meaningful things

- When I am responsible for something, I always find a way to get it done, even without the necessary resources and help

- I am conscientious in whatever I do, big or small

- Even under challenging circumstances, I still choose to do what is right rather than what is expedient

Their Responsibility Questionnaire (RQ) was validated through two stages of factor analysis with strong factor loadings from 0.55 to 0.80, and the internal reliability of the scale and subscales are strong, with an alpha coefficient of 0.92 (p.6). Their exploratory factor analysis accounted for 46% of the variance (Arslan & Wong, 2022). The authors conclude the RQ is a fit model to assess personal responsibility among adults. The relationship between teachers' personal responsibility values and their educational values leads to a broader consideration of how political leanings influence educational pedagogical practices.

Political Ideology

The interplay between teachers' political ideologies and grading practices remains uncharted in educational research. While this may be scarce, more compelling evidence suggests a strong potential for political influences to shape educators' perspectives (Hess et al., 2000). Stonecash and Brewer (2015) posit that, in contrast to earlier periods of U.S. history, personal responsibility has emerged as the predominant value separating conservatives from liberals in recent decades. Swanson (2000) argues that liberal and progressive individuals may undervalue personal responsibility, while conservatives might downplay the role of social conditions. A recent study by Rivera et al. (2022) further supports this notion, revealing that conservative-leaning individuals are more inclined to endorse personal responsibility than their liberal-leaning counterparts, who prioritize social responsibility.

To measure individuals' ideological inclinations, the Pew Research Center (2014) created a 10-question scale in 1994 that gauges the extent to which people offer liberal or conservative views across various political dimensions. While the researchers do not provide validity statistics to their results, their original Cronbach alpha of 0.50 in 1994 has increased to 0.72 in 2014. The researchers describe the mean scores have shifted over their twenty years of data on two issues: homosexuality and immigration. The researchers used offensive language when generating the 1994 10-question survey with off-hand language describing Black people to "flatten" the ideological differences (Pew Research Center, 2014). Nevertheless, the researchers claim the scale needs to be updated to reflect more pressing issues of current conservative-learning and liberal-leaning individuals today (Pew Research Center, 2014).

While the relationship between teachers' measured political ideologies and their grading practices remains uncharted territory in educational research, we must still consider the potential

influence of political ideologies on educators' teaching practices. This relationship of prioritizing personal or social justice does not remain confined to just teachers' perspectives; it infiltrates educational decision-making. Dunn et al. (2019) illuminate how the sociopolitical landscape seeps into teachers' pedagogical choices, reflecting the prevailing political context of the time. Zaller (1992) contends that teachers, like all other individuals and professionals, assimilate information from various sources, inevitably shaping their political preferences. This unintended yet undeniable phenomenon extends to the classroom environment, as evidenced by RAND researchers. Woo et al. (2022) found 48% of principals and 40% of teachers reported political issues were a job-related stressor. Journell (2009) propounds that teachers cannot remain politically neutral in their educational philosophies, as their beliefs and values invariably intertwine with their profession.

Although the direct link between teachers' political ideologies and their grading practices remains unexplored, teachers who value personal responsibility and individual effort may approach grading differently than those who consider broader social factors. This divide could extend to equitable grading practices, with conservative learning educators perceiving such approaches as diminishing students' sense of personal responsibility. Recognizing teachers as political beings whose beliefs and values inevitably shape their professional practices (Dunn et al., 2019; Rivera et al., 2022; Woo et al., 2022), we can conjecture political ideologies may subtly influence grading philosophies, thereby warranting a more comprehensive exploration of this dynamic.

Teacher Characteristics

Educational researchers agree that teachers differ in quality and characteristics based on their beliefs and values (Clotfelter et al., 2007; Sun & Cheng, 2014). Like many facets of

education, grading practices serve as a canvas on which teachers project their individual philosophies, leading to divergent approaches that can either align or clash with prevailing paradigms. Teachers include non-cognitive skills in the final grade based on their need to teach students discipline or their differing values on what is best for students (Chen & Bonner, 2017; Morris & McKenzie, 2023). When confronted with the prospect of grading reforms, teachers' reactions are often a mix of partial support, tentative engagement, and, at times, genuine frustration (Olsen & Buchanan, 2019). Several factors could influence teachers' perspectives and philosophies that could trickle down to their beliefs about grading.

Years of experience could significantly shape how teachers develop their grading practices. The National Bureau of Economic Research (NBER) conducted an extensive study, revealing a positive correlation between teachers' years of experience and student achievement (Clotfelter et al., 2007). Chen and Bonner (2017) found that preservice teachers understand fair grading principles strongly. However, the realities of day-to-day classroom experiences and school policies often hinder them from fully embracing non-traditional grading practices. Graham et al. (2020) identified marginal effects of years of experience on student achievement. Still, they conclude that more years in teaching do not always translate into improved pedagogies or teaching philosophies. More experienced teachers might harbor reservations about adopting grading for equity practices or standards-based grading, possibly influenced by the frequent waves of educational reform. This could lead to cynicism about the efficacy of new changes (Hess, 1999). While Chen and Bonner (2017) surveyed preservice teachers' grading beliefs, little is known about the relationship between teachers' years of experience and their opinions on grading equity practices.

Grade-level specialization plays a pivotal role in shaping teachers' grading philosophies and values. Research highlights notable differences across elementary and secondary educators. Elementary teachers, instructing Grades 3-5, primarily prioritize academic performance and content mastery while placing less emphasis on factors like homework completion and due dates (McMillan et al., 2002). In Grades 6-12, a shift occurs as teachers, while still valuing academic performance, exhibit variations from their elementary counterparts by emphasizing assessments and graded homework (McMillan, 2001; Guskey & Jung, 2009). Additionally, Bonner and Chen (2009) found secondary teacher candidates to be statistically significantly higher (one-third of a standard deviation) in support of grading with behavioral and traditional management approaches in mind. These practices can have implications for students' standardized test outcomes, as a greater emphasis on assessments and content mastery aligns with equitable grading practices, potentially positively impacting test performance.

In contrast, teachers holding Master's degrees might demonstrate a greater inclination towards supporting equity-based grading practices. Graduate schools often emphasize pedagogical equity, potentially exposing educators to supportive educational theories (Frisby, 2013). However, it is worth noting that not all research aligns with this perspective. Drawing from a substantial administrative dataset, Clotfelter et al. (2007) reported minimal effects of graduate degrees on teaching practices and student achievement. Likewise, Ladd and Sorenson (2015) corroborated that teachers with Master's degrees exhibit no greater effectiveness in teaching than those without such degrees. While some researchers argue that higher levels of teacher education could lead to increased exposure to equitable pedagogies, economists find limited evidence to suggest a direct impact on student achievement.

Moreover, the subject areas teachers teach might also shape their grading practices. Educators specializing in core subjects such as mathematics, English language arts (ELA), science, or social studies may exhibit a higher propensity for embracing standards-based grading approaches, with a particular focus on evaluating students' content knowledge (Feldman, 2019). However, when it comes to non-core subjects like Physical Education, the adoption of mastery or content-based grading may encounter some reluctance. This hesitation often stems from the desire to incorporate factors like participation and effort into the final grade, as highlighted by Melograno (2007). James (2018) underscores the potential benefits of improved grading practices, such as standards-based grading, in delivering higher-quality information to students, parents, and teachers, regardless of the subject matter.

In summary, teacher levels of personal responsibility, teacher political ideologies, and teacher characteristics weave into their educational pedagogies and beliefs. Educator's viewpoints mirror the multifaceted nature of the classroom climate they navigate. As teachers' philosophies could cascade into their classroom practices, the link between these teacher characteristics and beliefs about equitable grading warrants exploration and understanding.

This Study

The previous sections have explored the evolution of grading practices, the emergence of equity-based grading approaches, and the intricate relationship between teachers' personal responsibility values, political ideologies, and educational pedagogies. As the grading landscape evolves, it becomes imperative to comprehend how teachers' characteristics shape their support for grading equity practices.

The primary objective of this study is to investigate the relationship between teachers' characteristics and their support for grading equity practices. We seek to explore how factors

such as years of teaching experience, grade-level specialization, level of education, subjects taught, personal responsibility values, and political ideologies collectively influence teachers' perspectives on equitable grading. While grading reformers like Feldman (2019) have underscored the importance of equitable grading practices, there is a gap in the literature on how teacher characteristics interact and influence their support for such practices.

To achieve this goal, this study will address the following research questions:

- R1: To what extent do teachers' political ideologies intersect with their perspective on grading equity practices?

- R2: To what extent do teachers' levels of personal responsibility influence their endorsement of equitable grading practices?

- R3: How do teacher characteristics (years of teaching experience, elementary-level vs. secondary-level, core vs. non-core, and education degree level) influence their support for grading equity practices?

The subsequent sections of this study detail the methodology employed to address the research questions, followed by the presentation of results. We conclude with a discussion, study limitations, and policy implications. This comprehensive exploration will contribute to the existing literature by describing the relationship between teacher characteristics and their support for grading equity practices.

Methods

Procedure

In October 2022, we developed the Teachers' Grading Perceptions survey for distribution among Arkansas teachers. Once the survey construction was finalized, we were granted Institutional Review Board (IRB) ethical clearance under approval number 2210428028. Our

survey design focused on three fundamental aspects of survey methodology: the selection of an appropriate sample, the determination of the requisite sample size, and the selection of the most suitable survey media (Levy & Lemeshow, 1999). Comprised of 19 questions, the survey encompasses various dimensions of interest, including teachers' levels of agreement with specific grading practices, the frequency at which these practices were employed, the distribution of final grades among students, and inquiries related to personal responsibility, administrative aspects, political viewpoints, and teacher demographic characteristics. Teachers were not required to answer any of the questions and could stop taking the survey at any point they deemed fit.

The survey was available to Arkansas teachers between November 7 and 25, 2022, via a Qualtrics survey link. To ensure wide-ranging outreach, the survey link was distributed to each district's principals, constituting 1067 email contacts. The contact information was sourced from the Arkansas Department of Education My School Info website (ADE, 2023). We requested the principals to forward the distribution of the survey link to their respective teaching staff. The distribution was through the Office for Education Policy (OEP) email with the involvement of a respected state policy researcher and Executive Director of OEP. To incentivize participation, the Teachers' Grading Perceptions survey included a gift card lottery incentive of a 1 in 3 chance of $100 gift card for participants who completed the survey. The survey was designed to maintain anonymity, and participation in the drawing was facilitated through a separate portal to ensure that no personal identification was associated with survey responses.

Participants

Arkansas is estimated to employ around 32,000 educators in public schools (OEP, 2023). However, variations in reported figures, such as the 46,000 teachers documented on the ADE (2023) website for a teacher demographics report, create a challenge for calculating our survey

response rate. While an exact count of teachers remains indefinable, a rough estimate can be

inferred from the number of respondents, who would have only gained access to the survey

forwarded from their principal. Table 1 presents an approximate response rate of about 11%,

offering an overview of the participation level. Our estimation assumes that if one teacher within

a school completed the survey, it is plausible to infer that other educators within the same

institution had a similar opportunity. Within this pool of an estimated 4,398 recipients, 506

teachers ultimately participated in and completed the survey.

Table 1

Teachers' Grading Perceptions Survey, Demographics of Estimated Survey Recipients

Race	Sample	State	Response Rate
American Indian or Alaska Native	21	201	14.3
Asian	33	170	9.1
Black or African American	185	3,540	9.2
Hispanic	84	601	16.6
Other	14	184	50.0
White	4,061	41,988	10.9
Total	4,398	46,684	11.0

The demographic characteristics of the respondents resemble the broader Arkansas

teacher population, as illustrated in Table 2 (refer to Appendix Table 2a for the complete

demographic profile of the 506 respondents). Correspondingly, 87.2% of the sample and 89.9%

of Arkansas public school teachers identify as White. The most notable divergence between the

sample and the state's teacher population is the representation of Black teachers, where the state

reports a percentage of 7.6% compared to the survey sample's 3.4%. Females constitute a

significant majority of the sample, comprising 77%. While we can deduce that this aligns with

the state's composition, a definitive figure is unavailable from ADE records, which are bereft of

additional data.

Table 2

Teachers' Grading Perceptions Survey Demographics

Race	Frequency	Percent	State	Percent
American Indian or Alaska Native	3	0.59	201	0.43
Asian	3	0.59	170	0.36
Black or African American	17	3.36	3,540	7.60
Hispanic	14	2.77	601	1.30
Other	7	1.38	184	0.40
Prefer not to say	21	4.15	–	–
White	441	87.15	41,988	89.90
Total	506	100	46,684	100

A substantial proportion of the teacher sample primarily serves middle and higher grade

levels, with K-4 teachers constituting only 17.4%. Among the survey participants, 70% report to

teach core courses. Of the surveyed teachers, 24.3% report to have held or currently hold

coaching positions within the schools. On average, respondents report having 15 years of

teaching experience, and 56.7% of the sample report to hold a Master's degree as their highest

educational attainment, with around 8% holding a professional degree, Ed.D., or Ph.D.

Instruments and Questions

In preparation for the main survey launch, we conducted a pretest from November 4 to 6.

The overall goal of the pretest was to identify any potential issues with the survey questions and

to gain insights into participants' understanding and response patterns (Simon & Francis, 1998).

This pretest functioned as a pilot phase to evaluate the survey's question effectiveness and

clarity. It aimed to ensure face validity, which pertains to how meaningful the survey questions

are to typical participants, and content validity, ensuring the questions align with the measured construct (Crocker & Algina, 1986; Zamanzadeh et al., 2015). The pretest involved four graduate students and one professor, each possessing prior teaching experience. The outcome of the pretest phase confirmed the survey's face and content validity. The average content validity score for the original 15-item grading equity scale was 0.96.

Similarly, the personal responsibility scale demonstrated a content validity score of 1. After conducting the pretest, we found no necessary changes needed to be made to the survey. Additionally, the participants took, on average, 7-8 minutes to complete the survey.

Grading Equity Scale

To create the grading equity scale, we developed an original 15-item measure to capture attitudes and support for equity-based grading practices. The creation of this scale drew inspiration from Feldman's (2019) work on grading equity, utilizing individual questions from his framework. The aim was to assess teachers' support for grading practices prioritizing fairness and equitable grading. With a dataset of 506 survey responses, we initially calculated the overall reliability of the 15-item grading scale using Cronbach's Alpha coefficient. The initial coefficient was 0.77, just short of the commonly accepted threshold of 0.80 for alpha coefficients (Crocker & Algina, 1986). We present these results in Table 3a in the Appendix. The analysis indicated that the original scale accounted for approximately 22% of the variance in responses.

To enhance the scale's reliability and validity, we removed two items from the original scale and added three new items. Through this iterative approach, the reliability coefficient of the scale increased to an acceptable 0.83 Cronbach's Alpha, as shown in Table 3b in the Appendix. Two of the newly added items included the frequency of retakes on assignments and exams, a prominent practice in Feldman's (2019) grading equity framework. The third item we included

was a categorical variable indicating whether teachers deducted zero points for items submitted a day, a week, or a month late. Only 18.5% (n=94) of the sample received a 1 for this indicator in the item, meaning they deduct zero points for work turned in a day, a week, or a month late.

The final scale comprising 16 items is presented alongside the original hypothesized scale in Table 3c in the Appendix. The two items that participants from the pretest phase did not agree upon regarding content validity were those we removed from the grading equity scale. This final version of the grading equity scale increased explanatory power, accounting for approximately 25% of the variance in responses.

Personal Responsibility Scale

In alignment with the work of Arslan and Wong (2022), we incorporated the Personal Responsibility scale to assess teachers' levels of personal responsibility. The original measurement study reported a commendable reliability coefficient of 0.92. While our survey's personal responsibility scale accounted for 46% of the variance, similar to the researchers', our Cronbach Alpha was only 0.79. Our observed lower reliability coefficient could be due to certain contextual factors unique to our Arkansas context. Teachers could tend to exhibit higher levels of responsibility than the broader population. This might skew responses, with relatively more participants providing ratings clustered around Agree or Strongly Agree. Additionally, the consistently high ratings might also reflect the relatively conservative state's environment. Despite our lower reliability coefficient, we opted to use our survey's personal responsibility scale results as a coefficient to explore our R2.

Political Ideology

To explore the potential influence of political ideology on teachers' perspectives, we initially considered using the Pew Research Center's (2014) 10-question ideological consistency

scale developed in 1994. However, upon careful evaluation, we decided against its use in our study. The questions within the Pew scale were considered overly offensive and extreme for our target audience of teachers, and we were concerned about the potential discomfort it might cause. Instead, we chose to prioritize the comfort of our participants.

While we did explore a Left-Right scale, researchers generally find it unreliable (Bauer et al., 2017). Unfortunately, we found no shorter yet validated or reliable political ideology scale in existing peer-reviewed research. To measure political ideology, we developed an alternative approach guided by a colleague specializing in educational statistics and research methods. This approach involved two direct questions aimed at assessing teachers' levels of liberalism in their social-political and fiscal-political views. Our goal was to formulate questions that were more suitable for our participants.

The Survey Document

Our Teachers' Grading Perceptions survey began with an introductory page, providing a detailed overview of the study's purpose and an informed consent statement. The survey then followed with our generated grading equity scale questions and a series of descriptive questions aimed at eliciting information about teachers' grading practices and gaining insights into their day-to-day classroom procedures. We placed the personal responsibility questions next, followed by a section focusing on teacher demographics and role including gender, race/ethnicity, the grade levels they taught, the specific content areas they taught, and an indicator of their experience as a coach. To explore gender identification, teachers were given four options: male, female, non-binary/other, or prefer not to say. Similarly, regarding race/ethnicity, participants were presented with eight choices: American Indian or Alaska Native, Asian, Black or African American, Hispanic, Native Hawaiian or Pacific Islander, White, Other, or prefer not to say.

Regarding the grade levels taught, we offered 13 choices spanning from K-12. In our analysis, we categorized these options into three groups: elementary (K-4), middle (5-8), and secondary (9-12). Regarding content areas, we offered nine choices: ELA, math, science, social studies, Special Education, English Language Learning, Gifted and Talented, related arts, or a fill-in-the-blank. To clarify our analysis, we binned as Core (ELA, math, science, social studies), Non-Core (all other content courses), and Programmatic (Special Education, English Language Learning, or Gifted and Talented). Teachers' years of experience were collected through a range from 1 to 35 or more school years, and we binned this into four different career categories: beginning career (1-5), middle career (6-15), end career (16-28) and extension career (29-35 plus). Lastly, the teachers could choose four options for the highest education degree they completed: Bachelor's degree, Master's degree, professional degree beyond a Bachelor's degree, or Ed.D./Ph.D.

We concluded the survey with the two political ideology questions. The sequencing of these questions at the end was intentional, aimed at mitigating the risk of survey abandoners (Crocker & Algina, 1986), ensuring that participants who might be concerned about the nature of the political ideology questions would have already completed the bulk of the survey.

Quantitative Method

Hierarchical Linear Regression. To discover the influence of teacher demographic variables on our dependent variable, support for the grading equity scale, we ran an analysis to explore which variables held statistical significance in explaining the variance within the grading equity scale. Employing a hierarchical regression, we aimed to determine if specific teacher demographic variables could contribute valuable exploratory value beyond the factors we had initially hypothesized (Rutter & Gastonis, 2001).

Our original model with only the grading equity scale regressed on our hypothesized teacher characteristics is:

Model 1: $y_{ic} = \boldsymbol{\beta}_1 liberal_i + \boldsymbol{\beta}_2 responsibility_i + \boldsymbol{\beta}_3 experience_i + \boldsymbol{\beta}_4 gradelevel_i + \boldsymbol{\beta}_5 content_i + \boldsymbol{\beta}_6 degree_i + \varepsilon_{ic}$

We gathered information on the survey about other teacher demographic characteristics like their gender, their race/ethnicity, and whether they had coaching experience. To explore if those three variables added statistically significant explanatory power to our model, we conducted:

Model 2: $y_{ic} = \boldsymbol{\beta}_1 liberal_i + \boldsymbol{\beta}_2 responsibility_i + \boldsymbol{\beta}_3 experience_i + \boldsymbol{\beta}_4 gradelevel_i + \boldsymbol{\beta}_5 content_i + \boldsymbol{\beta}_6 degree_i + \boldsymbol{\beta}_7 gender_i + \boldsymbol{\beta}_8 race_i + \boldsymbol{\beta}_9 coach_i + \varepsilon_{ic}$

Our R^2 explained 15.1% of the variance when we conducted our first model. When we added the three extra variables—gender, race, and coaching indicator—our R^2 only increased to 15.7% of the variance, a 0.6% change with a p=0.319, which is not a statistically significant addition to our original model. These three variables did not meaningfully enhance the explanatory capability of our original model; therefore, our methodological approach will remain with our original regression model.

Multivariate OLS Regression. Following the hierarchical regression that identified the variables essential for our model, we proceeded to input these variables into an ordinary least squares (OLS) regression. This regression methodology aimed to find the parameter values within our regression model. The OLS regression minimizes the sum of the squared residuals (Cunningham, 2021).

Our dependent variable is our self-generated Feldman (2019) grading equity scale, while the independent variables are personal responsibility, political ideology, and a vector of teacher

characteristics. To explore our three research questions, our OLS multivariate regression is as follows:

$$y_{ic} = \beta_0 + \boldsymbol{\beta}_1 liberal_i + \boldsymbol{\beta}_2 responsibility_i + \boldsymbol{\beta}_3 \boldsymbol{\chi}_i + \varepsilon_{ic}$$

Where:

- y_i is the standardized dependent variable of interest, our support for grading equity practices scale, for teacher i

- $\boldsymbol{\beta}_1$ is the estimate of a teacher's self-reported political liberalism on a 0 to 1 scale,

- $\boldsymbol{\beta}_2$ is the estimate of a teacher's level of personal responsibility on a 0 to 1 scale,

- $\boldsymbol{\chi}_i$ is a vector of characteristics for teacher i (years of experience, grade level taught, content taught, and education degree level), each associated with corresponding $\boldsymbol{\beta}_3$ coefficients,

- ε_{ic} accounts for the random error associated with the teacher i

Results

Descriptive Findings

Our 19-item questionnaire included descriptive questions illuminating various dimensions of teachers' grading practices. Teachers provided self-reported percentages of students in their classes receiving different final grades, revealing an average of 45% of students receiving A grades, with 5.5% receiving F grades. Teachers were prompted to delineate the proportions of a student's grade in their classes, within-class assignments accounting for 31%, tests for 24%, quizzes for 10.2%, and projects for 10.2%. Only 82.4% confirmed the presence of a written grading policy in their schools, and this factor is not correlated with their perspectives on equity-based grading practices.

Teachers' sentiments regarding pressure from leadership and parents to adjust grades are illustrated in Tables 4 and 5. Among the 506 surveyed teachers, 191 (37.8%) reported never feeling pressure from leadership to modify students' grades, while 41 teachers (7.9%) acknowledged experiencing frequent pressure from the administration to make such adjustments. In contrast, 25.9% indicated never feeling pressure from parents to adjust grades; 10.7% reported frequent pressure from parents to do so.

Table 4

Frequency of Teachers' Perception of Pressure from Leadership to Adjust Grades

Frequency	N	Percent
Never	191	37.8
Rarely	138	27.3
Sometimes	136	26.9
Often	41	7.9
Total	506	100.0

Table 5

Frequency of Teachers' Perception of Pressure from Parents to Adjust Grades

Frequency	N	Percent
Never	131	25.9
Rarely	195	38.5
Sometimes	126	24.9
Often	54	10.7
Total	506	100.0

Table 6 presents the political ideologies and support for grading equity practices within our sample of 506 teachers. A large portion of the sample identified with conservative political ideology, while a smaller fraction aligned with liberal views. Among conservative teachers, the average level of support for grading equity practices stood at 47%, whereas their liberal

counterparts exhibited an average of about 56% support for such practices. Total support for grading equity practices averaged 51%, meaning modest Feldman's (2019) equitable grading framework.

Table 6

Political Ideologies and Perceptions of Grading Equity Practices

	Conservative	Moderate	Liberal	Total
N	218	161	127	506
Grading Equity Mean	0.47	0.52	0.56	0.51

Multivariate Regression

The outcomes of our OLS multivariate regression are presented in Table 7 below. Our model accounts for 21% of the variance; however, only four out of the six relationships of interest are statistically significant after controls.

Table 7

OLS Regression Analysis of Teachers' Grading Perceptions and Teacher Characteristics on Grading Equity Practices

	Support for Grading Equity
Liberal vs. Conservative	0.60***
	(0.11)
Moderate vs. Conservative	0.30***
	(0.09)
Personal Responsibility	-0.24
	(0.26)
Master's vs. Bachelor's	0.30***
	(0.08)
Professional vs. Bachelor's	0.34*
	(0.34)
Doctorate vs. Bachelor's	1.01***

	(0.35)
Middle vs. Beginning	-0.01
	(0.10)
End vs. Beginning	-0.01
	(0.12)
Extension vs. Beginning	-0.11
	(0.15)
Non-core vs. Core	-0.23***
	(0.09)
Programmatic vs. Core	0.23***
	(0.10)
Middle vs. Elementary	0.10
	(0.12)
Secondary vs. Elementary	-0.40***
	(0.10)
constant	-0.06
Pseudo R2	0.21
Observations	*506*

Note: Robust standard errors are in parenthesis. "Support for Grading Equity Practices" are in standard deviations. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

RQ1. To What Extent Do Teachers' Political Ideologies Intersect with Their Perspectives on Grading Equity Practices?

Political Ideology. Holding other variables constant, teachers identifying with more liberal-leaning political ideologies are 0.60 standard deviations more likely to support grading equity practices than their conservative-leaning counterparts, significant at the 99% confidence level. Similarly, teachers with more moderate-leaning political ideologies are 0.30 standard deviations more likely to support grading equity practices than conservative-leaning teachers, again at a 99% confidence level.

RQ2. To What Extent Do Teachers' Levels of Personal Responsibility Influence Their

Endorsement of Equitable Grading Practices?

Personal Responsibility. Holding other variables constant, there is no statistically significant association between teachers' levels of personal responsibility and their support for grading equity practices.

RQ3. How Do Teacher Characteristics Influence Their Support for Grading Equity Practices?

Years of Teaching Experience. Holding other variables constant, no statistically significant association exists between teachers' years of experience and their support for grading equity practices.

Grade Level Taught. Holding other variables constant, teachers serving elementary levels K-4 are 0.40 standard deviations more likely to support grading equity practices than teachers serving secondary grade levels 9-12, at a 99% confidence level. However, no statistically significant relationship exists between middle and elementary-grade teachers' support for grading equity practices.

Content Taught. Holding other variables constant, teachers who teach core courses are 0.23 standard deviations more likely to support grading equity practices than teachers who teach non-core classes, with a 99% confidence level of significance. Likewise, teachers who teach programmatic courses (Special Education, English Language Learners, Gifted and Talented) are 0.23 standard deviations more likely to support grading equity practices than teachers who teach non-core classes, with a 99% confidence level of significance.

Education Degree. Holding other variables constant, teachers with Master's degrees are 0.30 standard deviations more likely to support grading equity practices than teachers with only Bachelor's degrees, with a 99% confidence level of significance. Additionally, teachers with

Professional degrees are 0.34 standard deviations more likely to support grading equity practices than teachers with only Bachelor's degrees, with a marginal significance at the 90% confidence level. Moreover, teachers with Doctorate degrees are 1.01 standard deviations more likely to support grading equity practices than teachers with only Bachelor's degrees, with a 99% confidence level of significance.

Discussion

Our findings shed light on teachers' support for Feldman's (2019) grading equity framework and how support is associated with their political ideology, levels of personal responsibility, and teaching characteristics. To explore these relationships, we designed a Teachers' Grading Perceptions survey that we validated in a pretest by five former teachers. Our sample included 506 surveyed Arkansas teachers from November 2022. We provide descriptive results about teachers' reported grading practices, and we also employ a multivariate regression to explore how teacher characteristics relate to their support for grading equity practices.

Our findings reveal moderate teacher support for grading equity practices. Politically conservative teachers are less supportive, aligned with existing research that underscores the impact of political beliefs on educators' professional decisions and policy orientations (Journell, 2009; Woo et al., 2022). Importantly, our survey's wording, which excludes the term "equity," challenges assumptions that nomenclature solely influences conservative-leaning peoples' stances (Kingson & Williamson, 1993; Kujawa, 2022), suggesting a deeper connection between ideologies and educational pedagogies. These findings contribute to the ongoing discourse by highlighting the interplay between political ideologies and educators' perspectives (Dunn et al., 2019; Journell, 2009; Rivera et al., 2022; Woo et al., 2022; Zaller, 1992). Educators' ideological

leanings could influence their pedagogical approaches, which, in turn, may influence their implementation of grading reform policies like equitable grading practices.

The relationship between teachers' levels of personal responsibility and support for grading equity practices does not emerge as statistically significant, potentially due to constrained variability of the former within the sample. While our personal responsibility scale's reliability alpha was lower than Arslan and Wong's (2022) findings, this could stem from teachers valuing responsibility more than the general populace. Notably, the absence of a pronounced link contradicts prior research indicating that individuals who emphasize real-world consequences and ownership might hold less favorable views of practices that reduce personal responsibility, such as grading equity measures (Chen & Bonner, 2017; Haskins, 2009; Preiss, 2016; Stonecash & Brewer, 2015). Our study, however, unveils no such distinction in our context. It is crucial to acknowledge that our findings do not negate the possibility of nuanced interactions between personal responsibility levels and diverse grading practices, which necessitates further exploration in future research.

Our investigation into the influence of teacher characteristics on support for grading equity practices yielded interesting results. Teachers' years of experience did not emerge as a significant factor in determining their support for grading equity practices, contrary to prior findings that years of teaching experience are impactful (Clotfelter et al., 2007; Graham et al., 2020). On the other hand, grade levels emerged as a significant determinant of educators' support for grading equity practices. This aligns with prior literature that grade-level specialization can shape their education philosophies and priorities (Bonner & Chen, 2009; Guskey & Jung, 2009; McMillan, 2001; McMillan et al., 2002) like elementary-level teachers valuing content knowledge over real-world readiness academic-enabling behaviors like secondary-level teachers.

Furthermore, instructional content significantly influences educators' perspectives on grading equity practices. Notably, teachers of core and programmatic courses are more inclined towards supporting equitable grading methods than their counterparts in non-core subjects. This distinction might reflect the diverse assessment and evaluation strategies across subjects. Core courses prioritize content mastery through standardized testing, aligning with the ethos of equity (Feldman, 2019). Conversely, non-core educators' reduced endorsement of grading equity practices could stem from the diminished urgency to ensure overall student success, a sentiment potentially influenced by the absence of top-down pressure on course failure rates (James, 2018; Melograno, 2007).

Finally, educators with advanced degrees, particularly at the Doctorate level, exhibited a heightened propensity to endorse grading equity practices compared to those with Bachelor's degrees alone. This observation implies that higher education may offer opportunities for exposure to theoretical frameworks and discourse on equity (Frisby, 2013), subsequently influencing their professional stance and methodologies. This association could stem from a deeper understanding of educational theory and student requisites. While our findings could contrast with the outcomes of Clotfelter et al. (2007) and Ladd and Sorenson (2015), which suggest that teachers with Master's degrees are not inherently more effective in teaching, our study explores into teachers' inclination to support enhanced and more equitable grading practices. This propensity might be nurtured through their exposure to advanced teacher education programs emphasizing improved grading methodologies and fairness (Chen & Bonner, 2017; Guskey & Jung, 2009).

Limitations

While our study contributes to the discourse on equitable grading practices, several limitations warrant consideration. First, our research was conducted using Arkansas teachers, which may limit the external generalizability of our findings to other regions with different educational and political climates (Andrade, 2018; Crocker & Algina, 1986). Secondly, the self-reported nature of our survey data may introduce response bias and social desirability effects. Future research could incorporate observational methods to mitigate these limitations. Despite these limitations, our study contributes valuable insights to the ongoing discourse on equitable grading practices.

Future Research

While our study provides valuable insights into teachers' characteristics and beliefs and their support of grading equity practices, several avenues for future research could extend our understanding of these relationships. Specifically, there is a need for more investigation into how conservative-leaning teachers might respond to policy updates that emphasize fairness and student support, potentially offering strategies for building broader consensus around equitable grading practices. A deeper exploration of how administrative policies and leadership priorities align with or challenge educators' perspectives on grading equity practices could provide insights for equitable grading implementations.

Moreover, gaining insights from educators who have successfully implemented grading equity practices in their classrooms could offer valuable knowledge about effective strategies and challenges during implementation. Utilizing qualitative research methods could help uncover the practical nuances that drive the adoption of these practices and their relationships on teaching and learning. A comparative study across diverse educational contexts could illuminate how policies, cultural norms, community dynamics, and student demographics interact with teachers'

characteristics to shape their grading beliefs and practices. This could provide a comprehensive understanding of the contextual factors influencing educators' grading equity approaches. Given the significant influence of political ideology and the importance of educators embracing the policies they are tasked with implementing a potential avenue could involve initiating grading equity practices within schools whose teachers exhibit relatively liberal orientations. This prospect could be particularly relevant for certain schools that prioritize equity in their mission and recruitment strategies (BLIND 2 & 3), showcasing the potential of leveraging alignment with ideological values for successful policy implementation.

Conclusion

In this research study, we explored teachers' perspectives on grading equity practices, considering the influence of their political ideologies, personal responsibility values, and various teacher characteristics. Through our self-created Teachers' Grading Perceptions survey, we explored these factors and their relationships with educators' support of equitable grading practices.

Liberal and moderate-leaning teachers were more inclined to support grading equity practices, underscoring the substantial influence of political beliefs on pedagogical stances. Despite emphasizing personal responsibility as a potential factor in grading attitudes, we found no significant association between teachers' levels of personal responsibility and support for grading equity practices. As we explored the relationship between teacher characteristics, years of teaching experience did not influence grading equity support. However, the grade level taught, content taught, and education level, all played significant roles in how teachers supported equitable grading practices.

While our study contributes valuable insights into teacher characteristics and their support for grading equity practices, limitations arose in our study. Our sample of Arkansas teachers may limit external validity. Future research could explore more conservative teachers' responses to fairness-focused policies and other successful implementation strategies of grading equity practices.

Our study provides an analysis that supports insights into how political ideologies, personal responsibility levels, and teacher characteristics could influence their support for grading equity practices. Scrutinizing the alignment of administrative policies with teachers' beliefs and perspectives might provide actionable insights for leaders wanting to make successful grading reform implementations.

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Appendix

Table 2a

Teacher Demographics of Teachers' Grading Perceptions Survey

Teacher Survey Demographics		
Race	*Frequency*	*Percent*
American Indian or Alaska Native	3	0.59
Asian	3	0.59
Black or African American	17	3.36
Hispanic	14	2.77
Other	7	1.38
Prefer not to say	21	4.15
White	441	87.15
Total	506	100
Gender	*Frequency*	*Percent*
Female	389	76.88
Male	104	20.55
Non-binary / other	2	0.4
Prefer not to say	11	2.17
Total	506	100
Grades Taught	*Frequency*	*Percent*
Kindergarten	53	3.3
1st	63	3.9
2nd	56	3.4
3rd	57	3.5
4th	66	4.1
5th	79	4.9
6th	83	5.1
7th	133	8.2
8th	147	9.0
9th	204	12.5
10th	228	14

11th	233	14.3
12th	225	13.8
Total	1627	100

Grades Taught Simplified	*Frequency*	*Percent*
Lower	88	17.4
Middle	150	29.6
Higher	268	53.0
Total	506	100.0

Content Areas	*Frequency*	*Percent*
ELA	200	19.5
Math	179	17.5
Science	161	15.7
Social Studies	142	13.9
Special Education	78	7.6
English Language Learning	57	5.6
Gifted and Talented	20	2.0
Related Arts	29	2.8
Other	158	15.4
Total	1024	100

Core	*353*	*69.8*
Non-Core	165	32.6
Programmatic	118	23.3
Coach	123	24.3

Years of Teaching	*Frequency*	*Percent*
1	31	6.1
2	26	5.1
3	23	4.6
4	30	5.9
5	24	4.7

6	22	4.4
7	18	3.6
8	21	4.2
9	19	3.8
10	26	5.1
11	14	2.8
12	15	3.0
13	16	3.2
14	13	2.6
15	18	3.6
16	10	2.0
17	11	2.2
18	9	1.8
19	8	1.6
20	15	3.0
21	11	2.2
22	10	2.0
23	18	3.6
24	14	2.8
25	12	2.4
26	6	1.2
27	10	2.0
28	10	2.0
29	10	2.0
30	7	1.4
31	3	0.6
32	4	0.8
33	4	0.8
34	5	1.0
35 plus	13	2.6
Total	506	100

Experience (Years of Teaching Simplified)	*Frequency*	*Percent*

Beginning	134	26.5
Middle	182	36.0
End	144	28.5
Extension	46	9.0
Total	506	100.0

Education	*Frequency*	*Percent*
Bachelor's	176	34.8
Master's	287	56.7
Professional	31	6.1
Doctorate (EdD or PhD)	12	2.4
Total	506	100

Table 3a

Original 15-Item Grading Equity Scale and Alpha Coefficients

Item	item-test correlation	item-rest correlation	average interitem covariance	alpha
q1_1n	0.12	0.02	0.02	0.79
rev2n	0.40	0.29	0.01	0.77
rev3n	0.44	0.34	0.01	0.77
rev4n	0.46	0.35	0.01	0.76
q3_1n	0.27	0.13	0.02	0.79
q3_2n	0.61	0.51	0.01	0.75
q3_3n	0.51	0.43	0.01	0.76
q3_4n	0.56	0.44	0.01	0.76
q3_5n	0.50	0.40	0.01	0.76
q3_6n	0.51	0.39	0.01	0.76
q3_7n	0.56	0.44	0.01	0.76
q3_8n	0.57	0.46	0.01	0.75
q3_9n	0.64	0.54	0.01	0.75
q3_10n	0.54	0.47	0.01	0.76
q3_11n	0.60	0.47	0.01	0.75
Test scale			0.01	0.77

Note: Item-test correlation shows how highly correlated each item is with the overall scale. The item-rest correlation (or corrected item-total correlation) shows how the item is correlated with a scale computed

from the other items. Average interitem covariance shows on average how much the items vary together. The last column, alpha, provides the alpha for the scale if that item was dropped from the scale.

Table 3b

Final 16-Item Grading Equity Scale and Alpha Coefficients

Item	item-test correlation	item-rest correlation	average interitem covariance	alpha
rev2n	0.37	0.28	0.020	0.83
rev3n	0.44	0.35	0.020	0.82
rev4n	0.43	0.33	0.020	0.82
q3_2n	0.62	0.53	0.018	0.81
q3_3n	0.60	0.53	0.019	0.81
q3_4n	0.66	0.58	0.018	0.81
q3_5n	0.57	0.50	0.019	0.81
q3_6n	0.44	0.34	0.019	0.82
q3_7n	0.51	0.40	0.019	0.82
q3_8n	0.55	0.45	0.019	0.82
q3_9n	0.56	0.47	0.019	0.82
q3_10n	0.48	0.41	0.020	0.82
q3_11n	0.58	0.48	0.018	0.81
q2_1n	0.54	0.46	0.019	0.82
q2_2n	0.61	0.51	0.018	0.81
latework	0.51	0.38	0.018	0.82
Test scale			0.019	0.83

Note: "latework" is binary indicator of teachers that deduct zero points for late work. Item-test correlation shows how highly correlated each item is with the overall scale. The item-rest correlation (or corrected item-total correlation) shows how the item is correlated with a scale computed from the other items. Average interitem covariance shows on average how much the items vary together. The last column, alpha, provides the alpha for the scale if that item was dropped from the scale.

Table 3c

Comparison of the Final 16-Item Grading Equity Scale and the Original Hypothesized Scale

		Original	Final
Item Code	Question	Alpha	Alpha

	Please indicate your level of agreement with each statement.		
q1_1n	The grades that I assign students reflect... - demonstration of content knowledge.	0.79	deleted
q1_rev2n	Please indicate your level of agreement with each statement. The grades that I assign students reflect... - level of work effort.	0.77	0.83
q1_rev3n	Please indicate your level of agreement with each statement. The grades that I assign students reflect... - attention to following directions.	0.77	0.82
q1_rev4n	Please indicate your level of agreement with each statement. The grades that I assign students reflect... - participation in class.	0.76	0.82
q3_1n	Please indicate your level of agreement with each statement. - Extra credit should not be offered or awarded in courses	0.79	deleted
q3_2n	Please indicate your level of agreement with each statement. - Points should not be deducted from work submitted late	0.75	0.81
q3_3n	Please indicate your level of agreement with each statement. - Retakes should be available to students after receiving additional support and reteaching	0.76	0.81
q3_4n	Please indicate your level of agreement with each statement. - Retakes should be available to any student on any assignment	0.76	0.81
q3_5n	Please indicate your level of agreement with each statement. - Retake scores should replace previous scores	0.76	0.81
q3_6n	Please indicate your level of agreement with each statement. - All assignments and grades should be explicitly linked to a standard	0.76	0.82
q3_7n	Please indicate your level of agreement with each statement. - Non-academic performance (behavior, participation, etc.) should not be included in final grades	0.76	0.82
q3_8n	Please indicate your level of agreement with each statement. - If homework is assigned, it should not be recorded as a grade	0.75	0.82
q3_9n	Please indicate your level of agreement with each statement. - Grades should only reflect a student's level of academic performance	0.75	0.82
q3_10n	Please indicate your level of agreement with each statement. - The final grade should reflect a student's content mastery	0.76	0.82

q3_11n	Please indicate your level of agreement with each statement. - A 0-4 scale for grades is more mathematically sound than the 0-100-point scale	0.75	0.81
q2_1n	How often do you as a teacher: - Offer retakes on assignments?	-	0.82
q2_2n	How often do you as a teacher: - Allow retakes on exams?	-	0.81
latework	How many points out of 100 would you typically deduct for student work that is: turned in a day late, turned in a week late, turned in a month late?	-	0.82
test scale		0.77	0.83