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The Politicization of School Reopenings: Media Coverage of Teachers Unions

Sarah King

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THE POLITICIZATION OF SCHOOL REOPENINGS: MEDIA COVERAGE OF
TEACHERS UNIONS

by

Sarah Ashley King

A Thesis
Submitted to the Graduate School,
the College of Arts and Sciences
and the School of Social Science and Global Studies
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

Approved by:

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ABSTRACT

The process of school reopenings during the COVID-19 pandemic has garnered a significant amount of attention from various stakeholders including parents, school administrators, teachers, teachers' unions, and the media. Negotiations over elements of school reopening policies, such as mask mandates and remote-learning options have, in certain school districts, been fraught with contention. The politicization of school reopening policies has been the source of a growing body of research, which tends to analyze policy decisions in conjunction with COVID data. However, a large gap in the literature has appeared concerning the politicization of school reopenings and the impact of the media, especially lacking a focus on the portrayal of teachers and teachers' unions by the media in the intense reopening policy negotiation process. Using a method of nonparametric automated content analysis, this thesis analyzes the media's portrayal of school reopening policy negotiations in the Chicago Public School District, Los Angeles Unified School District, and New York City Public School District, which are the three largest school districts in the U.S. The results indicate a broadly negative framing of teachers unions by the media, especially in school district with stronger teacher unions such as Chicago Public School District. The 2019 strikes by the United Teachers of Los Angeles and the Chicago Teachers Union were stark examples of the negative rhetoric in the media concerning teachers and teachers unions in the media. However, there were instances of heightened positive responses in the media to school reopenings during the COVID-19 pandemic.

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DEDICATION

I would like to dedicate this research to all of the hardworking teachers that continued to provide the best education possible to students during the COVID-19 pandemic. As a licensed educator, I am constantly inspired by the storied of educators fighting to improve the lives of their students inside and outside of the classroom.

I would also like to dedicate my thesis to my mom, Megan Boswell. Our morning FaceTime calls always made me smile, even if I was overwhelmed with classwork, research, or teaching. She has consistently been my rock of support for the last two years and I can't thank her enough for being my mom.

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LIST OF ABBREVIATIONS

<i>CPSD</i>	Chicago Public School District
<i>LAUSD</i>	Los Angeles Unified School District
<i>NYCPSD</i>	New York City Public School District
<i>CTU</i>	Chicago Teachers Union
<i>UToLA</i>	United Teachers of Los Angeles
<i>NLP</i>	Natural Language Processing
<i>ESSA</i>	Every Student Succeeds Act (2015)
<i>NCLB</i>	No Child Left Behind (2001)
<i>CDC</i>	Centers for Disease Control and Prevention

CHAPTER I – INTRODUCTION

The COVID-19 pandemic has, undoubtedly, had a drastic impact on the public education system in the United States. By March 25th, 2020, all U.S. public schools had closed, affecting more than 50.8 million students (Decker et. al. 2020). As many schools began to announce they would remain closed for the rest of the 2019-2020 school year, questions over when and how schools would eventually reopen began widely circulating in the mainstream media. The process of school reopenings during the COVID-19 pandemic has garnered a significant amount of attention from various stakeholders including parents, school administrators, teachers, teachers' unions, and importantly, the media. Negotiations over elements of school reopening policies, such as mask mandates and remote-learning options have, in certain school districts, been fraught with contention. The politicization of school reopening policies has been the source of a growing amount of scholarly literature (Flanders 2020; Benzian et al. 2021; DeAngelis and Makridis 2021; Marshall and Bradley-Dorsey 2020; Hartney and Finger 2021), which tends to analyze policy decisions in conjunction with COVID-19 data. Another strand of studies focuses on qualitative interviews with educators, which had themes of uncertainty, worry for their students, and worry for their own health (Kim et. al. 2021). However, a large gap in the literature has begun to appear concerning the politicization of school reopenings and the impact of the media, especially lacking a focus on the media's framing of the influential role teachers and teachers' unions played in the intense reopening policy negotiation process.

Headlines such as, "Chicago Teachers Union at 'impasse' with CPS as start of school looms; district says CTU 'is rejecting science for their own gain'" (Swartz 2021),

“Emails show Chicago Teachers Union playing games while kids languish out of school” (Ed. Board 2021), and “California teachers’ latest demand: Free child care” (Mays 2021), are a few examples of the politicization of teachers’ unions during negotiations over school reopenings by the media that may have contributed to the heightened levels of polarization amongst parents, teachers, school board officials, and school administrators.

While there has been a consensus amongst researchers that teachers unions have undoubtedly influenced school reopening policies (DeAngelis and Makridis 2021; Flanders 2020; Hartney and Finger 2021), an examination of the impact of the media’s framing of teachers unions during the school reopening process is absent from the literature. Thus, this study seeks to expand the literature on the media’s role in agenda-setting and policy outcomes as well as contribute to application of natural language processing methods to social science research. By utilizing an existing method of automated nonparametric content analysis to examine a novel dataset of over 2,500 news articles concerning school reopening policies and teachers unions, this study will address a series of interconnected research questions; Did the media frame teachers and teachers unions positively or negatively during the school reopening policy negotiation process? Did the strength of the union impact the media’s portrayal of teachers and teachers unions during the school reopening policy negotiation process? Did the media frame teachers and teachers unions differently before COVID-19?

By using natural language processing to analyze a large corpus, comprised of the media’s coverage of teachers and teachers unions during the school reopening policy negotiation process in the three largest school districts in the United States, Chicago Public School District, Los Angeles Unified School District, and New York City Public

School District, over a period of more than two years, this study will not only expand the literature on the role of the media in policymaking and agenda-setting but also, will introduce an efficient method of analysis to evaluate a large corpus of news articles, which could be applicable to a wide range of research fields. Furthermore, an efficient method of analyzing vast quantities of media information for different social science research applications is paramount in the current age of information. The findings of the study indicate a generally negative response by the media to increased teacher union action such as strikes or involvement in policy-negotiation. There were instances of an increasingly positive media rhetoric towards teachers and teachers unions when school districts began to reopen, regardless whether the school district reopened remotely, in a hybrid format, or for fully-in-person instruction.

CHAPTER II – LITERATURE REVIEW

Media and Agenda-Setting: A Policy-Making Approach

There is a large body of literature considering the role of mass media in the policy-making process (Soroka et. al. 2012; Baumgartner et. al. 1997; Baumgartner and Jones 1993; Kingdon 1984, 1997). In literature from both communication studies and policy studies, there are several interconnected theories that attempt to answer a perennial question “Why do governments pursue the policies that they do?” Agenda-setting, issue framing, and priming serve as the theoretical underpinnings to answer this question for both political communication and policy studies researchers (Soroka et. al. 2012; Scheufele and Tewksbury 2007; Russell et. al., 2014; Wolfe et. al. 2013). Before discussing how agenda-setting, framing, and priming work together to characterize the media’s role in influencing public opinion and policymaking, it is helpful to start with definitions. Agenda-setting is described in the literature as the overarching umbrella theory, while framing and priming are secondary attributes (Entman 2007). Agenda-setting “refers to the idea that there is a strong correlation between the emphasis that mass media place on certain issues and the importance attributed to these issues by mass audiences” (Scheufele and Tewksbury 2007). Drawing on the seminal work by Cohen (1963) in conjunction with subsequent literature (Kingdon 1997; Baumgartner and Jones 1993; Rogers et. al. 1993), Soroka et. al. (2012) explains that “mass media may not define the nature or direction of policy change but can certainly steer attention towards certain policy domains over others” (Soroka et. al. 2012, 206). Significant for this study in particular, Soroka et. al. (2012) also notes that while a large portion of the agenda-setting literature focuses on the broad policy agenda, “the role of media in setting the

policy agenda can also be seen at the individual level, that is, impacting individual political and policy actors directly” (Soroka et. al. 2012, 207). Ordinary citizens rely on media cues to ‘prioritize information and to disseminate public opinion’ (Walgrave and van Aelst 2006, 100; Soroka et. al. 2012). Therefore, the consensus in the literature suggests that media plays a significant role in determining which issues are important not only for policymakers, but also the general public. This consensus is especially important for the focus on education policy. School closures resulting from the COVID-19 pandemic impacted more than 50.8 million students, which does not account for the teachers, parents, guardians, and school staff that were also impacted. Since education policy significantly impacts a large portion of the population’s daily lives, changes, such as school closures or the method of instruction, have a more pronounced impact.

Furthermore, literature suggests that the public has largely associated education policy with economic crises, whether as the cause or the solution to the crises, in the wake of the introduction of neoliberal market principles to education policy reform (see Apple 2001a; Apple 2001b; Gabbard and Atkinson 2007; Hursh 2007; and Goldstein and Chesky 2016). In the specific context of analyzing reactions, both by the media and by the public, to education policy change as a result of a major external stimuli, COVID-19 can be seen as an economic crisis, even though the real impacts to the economy were not felt simultaneously to school closures. The relationship between external stimuli, changes education policy, and reactions by both the public and the media is not one-directional and is an extremely complex dynamic to analyze. The unclear, multi-directional relationship between various actors in the agenda-setting process remains one of the perennial problems encountered by political communication and mass media scholars.

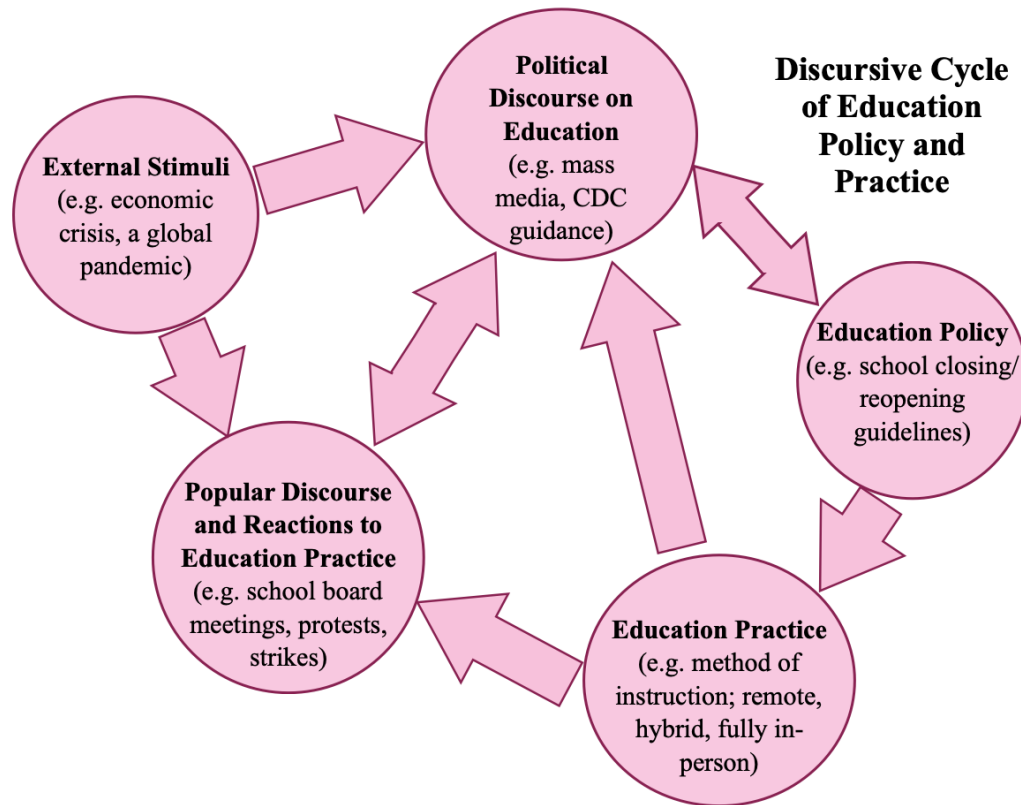


Figure 1. Discursive Cycle of Education Policy and Practice

Figure 1 (above) was adopted from Reichel (2018), who argues that “framing of education is inherently different than most instances of framing, because it involves the portrayal of an institution that serves a similar role to the mass media itself: one involved in meaning-making and the promulgation of narrative and discourse” (Reichel 2018, 484). I have altered *Figure 1* to reflect the specific topic of public and political discourse reactions to the impact of COVID-19 on education policy, specifically through school closures. As mentioned above, the relationship between the various actors in the agenda-setting process is not one-directional. *Figure 1* illustrates that an external stimulus, such as COVID-19, sets of a chain reaction in both political and public discourse. Following *Figure 1*, for example, the beginning of the COVID-19 pandemic influenced political

discourse on education policy through the Centers for Disease Control and Prevention guidelines on school closures and reopenings, which was also discussed by mass media outlets, which then impacted education policy in the form of school districts' school closure and reopening policies, implemented through education practice. The method of instruction, whether remote, hybrid or in-person, then influenced political discourse and public reactions, which could take the form of increased participation in local school board meetings, parent protests, or teacher strikes or walkouts. While *Figure 1* is not a holistic representation of the complex agenda-setting dynamics of education policy, it does provide a general framework for thinking about the process.

Agenda-setting literature argues that mass media can function to increase issue saliency and importance for a mass audience; therefore, a further argument is made “that mass media can also shape the considerations that people take into account when making judgments about political candidates or issues” (Scheufele and Tewksbury 2007). By shaping the considerations and accessible information audiences utilize to make judgements, news content is performing the function of ‘priming’ the reader. “Priming refers to changes in the standards that people use to make political evaluations” (Iyengar and Kinder 1987, 63). Priming occurs when news content suggests specific issues as “benchmarks for evaluating the performance of leaders and governments” (Scheufele and Tewksbury 2007; Iyengar and Kinder 1987). More simply, as media highlight certain issues more frequently, “these issues are primed in the minds of the public and are more accessible when forming judgments about policies or candidates” (Van Duyn and Collier 2019).

While agenda-setting and priming literature seeks to evaluate *what* issues are being presented in the media, issue framing analyzes *how* those issues are presented. Agenda-setting research has increasingly focused on not just how important an issue is, “but also how the issue is framed, and which issue attributes are emphasized” (Russell et. al. 2014). The issue framing school of thought relies on the assumption that “how an issue is characterized in news reports can have an influence on how it is understood by audiences” (Scheufele and Tewksbury 2007). The way an issue is framed can increase the saliency of certain ideas or issues, “activating schemas that encourage target audiences to think, feel, and decide in a particular way” (Entman 2007). Issue framing literature is often drawn to foundations in both psychology and sociology. Soroka et. al. (2012) argues that the way in which the media frames issues can often influence the ‘direction of policy’ by utilizing emotional terms (Soroka et. al. 2012, 209). Central to this proposal Soroka et. al. (2012) describes a common issue framing method of ‘problem identification’, which focuses on framing the issue, such as school reopenings, in a way that attributes the cause and assigns blame (Soroka et. al. 2012). Problem-identification, as described by Soroka et. al. (2012), is a form of strategic framing, which can function “to highlight the causes of problems, encourage moral judgments, and promote favored policies” (Entman 2007). Furthermore, since an intended effect of strategic framing is to influence how audiences make judgements and what information is available to inform those judgements, priming can be described as a goal of framing activities (Entman 2007). Issue framing is a key theoretical element to the study of the media’s portrayal of teachers.

Media and Education Policy

While there has been limited research into education reporting specifically, a consensus has emerged that news coverage of education policy issues is highly influential in shaping public opinion about schools and teachers (Cohen 2010; Mockler 2018; Shine and Rogers 2021, 194). However, the limited scholarship analyzing the media's coverage of teachers, specifically, is based in Australia, while scholarship in the U.S. focuses more broadly on education policy as whole, such as No Child Left Behind (2001). Although the teaching profession itself is not a prominent topic of study in the U.S., especially within the realms of media and communication research, teachers unions have been a significant actor included in labor relation and policy studies. After an uptick in highly publicized education policy labor action throughout the late 2000's and culminating in the #RedforEd movement in 2018, media and communication literature began to direct their focus on the complex relationship between mass media, issue framing, and public opinion. Such highly publicized protest movements have been characterized in the literature on agenda setting as 'focusing events', which "can and often do shift the attention of the media, refocusing attention to problems or issues that are either novel or were previously unattended or underattended" (Wolfe et. al., 2013; Lyon 2021). In a recent study of education policy as an issue during congressional campaigns, Lyon (2021) argues that by capturing public attention, the #RedforEd movement "played a role in shaping the prominence of education issues in political discourse" (Lyon 2021). #RedforEd was one of the largest coordinated work stoppages in the United States in nearly two decades (Bureau of Labor Statistics 2020) and thus became a major topic of interest for researchers in political communication, policy, and labor relations studies.

Reichel (2018) argues “because schoolteachers, especially in public schools, constitute one of the few professions that remains heavily unionized in this country and elsewhere, they are particularly well-positioned to challenge policy that that they deem detrimental to a healthy educational environment, in addition to the logics and media frames deployed to justify those policies” (Reichel 2018, 484). The way a teacher strike is framed by the media and through political discourse is crucial in order for the teachers to achieve their goals. Lyon (2021) posits that it is not enough to just capture the public’s attention; a strike also needs to garner public sympathy in order for the worker’s demands to be met, or even considered. Media frames are typically categorized as either positive or negative. A positive framing of teacher strikes and other collective labor actions, tends to “drive media coverage toward a socially constructed image of teachers as deserving” (Schneider and Ingram 2019; Perrillo 2012) A common demand of teacher protests seeks to address “systemic resource gaps and out-of-school circumstances” (Lyon 2021; Bulkley and Gottlieb 2017), which can serve to positively frame teachers as deserving and morally good. However, negative framing of teacher strikes promotes a “narrative of teachers as self-interested or undeserving” by emphasizing the costs endured by families, students, and community members (Lipsky 1968; Lyon 2021), which is relevant given the widespread school closures related to the COVID-19 pandemic. Furthermore, Lyon (2021) argues that if teachers unions do not participate in significant relationship building in order to strengthen community trust, strikes may foster a “teachers versus parents,” “teachers versus students,” or “teachers versus school administration” narrative that hampers the public sympathy required for teacher strikes to achieve their goals (Lyon 2021).

The consensus that news coverage of education policy and teachers unions is highly influential is especially significant given that “related research that has pointed to a prevalence of negative reporting of education” (Shine and Rogers 2021, 194). The prevalence of negative coverage has been named a prominent factor in teachers’ decision to leave the profession (Heffernan et. al. 2019), which is important context to consider when analyzing the current state of the education system in the aftermath of COVID-19. According to a recent report from the RAND Corporation, at the end of January 2021, 23% of teachers surveyed reported they were “likely to leave their current teaching jobs by the end of the 2020-2021 school year” (Steiner and Woo 2021, 5). Anderson (2007) summarizes the role the media can play in covering education policy by “creating political spectacle, framing problems, feeding moral panics” which can indirectly impact educational policy and practice (Anderson 2007, 115). Significantly, Anderson (2007) also posits that the media can play a more direct role on *local* policies and practices (Anderson 2007). Combined with the argument by Reichel (2018) that “ideological discourses occurring in society writ large are mirrored in the realm of education through struggle over policy and structure” and the polarization over COVID-19 policies, the local impacts of the media’s coverage school reopenings should be significant.

Stakeholders in Education Policy and COVID-19

There is consensus in the literature that teachers’ unions played an integral role in school reopening policy decisions, marking the politicization of school policy, which has historically been ‘relatively insulated from national partisan cleavages’ (Hartney and Finger 2021; Grossman et. al. 2021). Hartney and Finger (2021) found that partisanship heavily influenced school decisions to reopen, with Republican districts being far more

likely to reopen in person while Democratic districts were less likely to open in-person. Additionally, they found union strength was a strong indicator of a school's decision to rely more heavily on remote learning options. This finding by Hartney and Finger (2021) is in line with the findings of DeAngelis and Makridis (2021) that "school districts in locations with stronger teachers' unions are less likely to reopen in person even after controlling semi parametrically for differences in local demographic characteristics" (DeAngelis and Makridis 2021). In a study of changes to teachers' unions' collective bargaining agreements in response to COVID-19, Hemphill and Marianno (2021) found that out of 101 school districts included in the study, roughly 25% of the school districts implemented changes to the collective bargaining agreements to allow for more flexibility regarding distance learning options (Hemphill and Marianno 2021). This finding further supports the cohesive trend in the literature that not only did teachers' unions significantly influence school reopening policies, but also the presence of teachers' unions in the negotiation process often resulted in a shift towards increased remote-learning options, hybrid schedules, and other policy elements intended to delay fully in-person reopenings.

A significant portion of literature focuses on describing the differences in school reopening policies across school districts. Marshall and Bradley-Dorsey analyze differences in modalities of learning, masks, vulnerable populations, and participation in fall sports leading up to the 2020 school year. Significantly, their research also highlights that "Almost every state's plan allowed for decisions about reopening to be made at the local level and for decisions to vary across the state" (Marshall and Bradley-Dorsey 2020, 536), which explains the significance of analyzing media coverage of specific school

districts instead of analyzing coverage of the entire state. School reopening policies varied not only from state to state but also from school district to school district. Therefore, measuring school reopenings policies and media coverage of those policies by district, rather than by state, more accurate. Since most states, especially the ones included in this study, delegated the responsibility of policymaking to the local school districts regarding school reopenings, analyzing the media coverage of the entire state's response to COVID-19 in schools would not accurately illustrate the impact of the media's coverage of teachers and teachers unions on the policy-making process. While policies may vary amongst school districts, Marshall and Bradley-Dorsey found that certain state governments, including Illinois and Florida, do explicitly lay out the goal of returning to in-person instruction in their plans offering guidance to localities (Marshall and Bradley-Dorsey 2020). However, Illinois' plan did recommend schools reopen with some type of hybrid instructional mode (Marshall and Bradley-Dorsey 2020). This is a significant finding for the proposed study given that although states did issue guidance on reopening, local school districts implemented varying approaches to reopening, which could be partially attributed to union influence and possibly the way the media framed the reopening negotiations at the local level.

Another theme in the literature focuses on qualitative analyses of teachers as individuals and their experiences in continuing instruction while navigating the constantly changing environment of the pandemic. Kim et. al (2021) use self-determination theory to analyze interview responses from 24 primary and secondary state schoolteachers in England, who all expressed feelings of anxiety related to the uncertainty of school reopenings (Kim et. al. 2021). Frustration regarding unclear

government guidelines was another consistent issue raised by the schoolteachers in Kim et. al.'s study, which parallels research analyzing the Center for Disease Control's (CDC) reopening guidelines for public schools in the United States (Benzian et. al. 2021).

Benzian et. al. (2021) hypothesizes that the open criticism of the CDC's reopening guidelines by the president, and others, which resulted in the CDC revising the guidelines and issuing a special 'Statement on the Importance of Reopening Schools under COVID-19', introduced bias "with the intention to shift the public perception and media narrative in favor of reopening schools" (Benzian et. al. 2021, 1). Benzian et. al. (2021) argues the White House felt the CDC's original reopening guidelines "placed too much emphasis on the infection risks related to school reopening" and responded by threatening to cut federal funding of public schools unless the guidelines were reworked (2). An analysis of the CDC's special statement indicated that the statement focuses on the "benefits of reopening and the missed benefits of not doing so" (Benzian et. al. 2021, 4) instead of offering guidance on mitigating the risk of infection, which "provides evidence of biased and selective presentation of science, intended to downplay the COVID-19 infection risks for children, teachers and staff returning to school" (4). Benzian et. al.'s analysis further exemplifies the heated politicization of the school reopening debate as well as justifies my specific focus on the politicization of teachers since they were seemingly absent from the CDC's guidelines. Lambert et. al. (2020) argues that teachers have been left out of the reopening debate as well after articulating the two rationales advanced in the previous administration's push to reopen schools: "the children need it to happen and opening facilitates parents' return to work" (Lambert et. al. 2020, 1).

CHAPTER III – EXPECTATIONS AND HYPOTHESIS

Given the consensus in the literature that teachers unions influenced school reopening policy decisions (see Hartney and Finger 2021; DeAngelis and Makridis 2021; Hemphill and Marianno 2021), the expectation is that media coverage of unions in districts with stronger unions, such as Los Angeles Unified School District, will be more negative than media coverage in districts with weaker unions, such as New York City School District, which prohibits teachers unions from striking. Additionally, there is evidence in the literature that media coverage of education policy, broadly, is negative (see Shine and Rogers 2021; Anderson 2007; Heffernan et. al. 2019). Therefore, there is the expectation that, overall, the media coverage surrounding education policy disruptions, such as school reopening policies, or strikes, will be more negative or ‘Anti-Teachers/Teachers Union’. Furthermore, the stronger a teachers union is in a school district, the more negative the sentiment of the news coverage will be regarding since stronger teachers unions can exert more influence over policy. There is also an expectation that the way a school district reopened, whether in-person (3), hybrid (2), remote (1), or closed (0) significantly influenced a change in the rhetoric of media coverage regarding teachers unions and teachers within a school district.

$$H1 \quad \quad \quad Media = Reopening_{0-3} + COVID + Meetings \\ (+ Union_{spirs})$$

Where *Media* is the result of an automated nonparametric content analysis, which is discussed in detail in Chapter VI, that illustrates an average score of the media’s rhetoric regarding teachers or teachers unions by month, per school district from January 2019 to January 2022. While the methods will be discussed in subsequent sections, it is

important to emphasize that the average score produced by the natural language processing method is not a score per article. *Media* represents the average amount of positive and negative conversation taking place in the media by month, per school district.

Reopening is an ordinal (0-3) measure of how school districts reopened with (0) denoting school closure, (1) denoting a remote reopening, (2) hybrid, and (3) fully-in person. The expectation is that *Media* will be significantly impacted by the way a school district initially reopened and when the school district began reopening. The longer amount of time a school district takes to reopen, in comparison to other school districts, the more negative the *Media* measure will be. For example, Los Angeles Unified School District and Chicago Public School District reopened significantly later in the 2020-2021 school year than New York City Public School District, which began reopening in September 2020. Therefore, I expect the *Media* measure for Los Angeles and Chicago to be more negative than in New York City as various stakeholders in school reopening negotiations become more frustrated.

Unfortunately, there was not a consistent measure across school districts of COVID-19 case counts per month that could be utilized for this thesis. Therefore, I have collected COVID-19 case counts per month, per *county* from the Centers for Disease Control and Prevention (CDC). The *county* level of measurement does not have that large of a difference from using a *school district* level since the CDC did provide COVID-19 case counts for New York City, which actually is comprised of 5 counties, separately and both Los Angeles Unified School District and Chicago Public School Districts service the most populous portion of the respective counties. Another limitation to the COVID-19

case count is the CDC's cumulative method of reporting. While the statistical impact of using the cumulative count for the analyses performed for this thesis is minor, it should still be mentioned.

Meetings is a count of the number of school board meetings per month, per school district. The counts were collected from each school district's school board website, which all had archived meetings through 2019. Including the number of school board meetings each month is intended to capture how involved the local governing institutions and other stakeholders in school reopening negotiations are in the policy-making process.

The results of the analyses will be situated within the context of stable measures of teacher union strength (*Unions_{pirs}*) provided by the Fordham Institute (see Winkler et. al. 2012). Unfortunately, since there is not a continuous measure of teacher union strength available, I could not include union strength in the statistical analyses. Additionally, the Fordham Institute's report analyzed teacher union strength by state, which is not necessarily applicable to the study of specific teachers unions in school districts. However, the measures from the Fordham Institute do provide more nuance to the results of the statistical analyses. Overall union strength ranking out of all states (*s*), perceived influence of the teacher union (*p*), involvement in politics (*i*), and the right to strike laws constraining a teachers union's ability to collectively strike over certain policy topics are included in the *Union* measure and will be considered in the discussion of the results of the various statistical analyses.

CHAPTER IV - INITIAL DATA AND RESULTS

The current research in this study draws upon my own previous work utilizing a different natural language processing method, focusing on sentiment, to analyze media coverage of teachers in relation to the enactment of Every Student Succeeds Act in 2015, which repealed the majority of No Child Left Behind (2001). In order to characterize the representation of teachers in the media, I conducted a search for news articles through the LexisNexis database. To enable a comparative analysis of potential impacts of Every Student Succeeds Act (ESSA) (2015) on the media's depiction of teachers, two searches were conducted with different time parameters. The first data set of articles covers the months prior to the passing of the ESSA from August 1st, 2015-December 10th, 2015, while the second data set of articles covers December 12th, 2015- May 31st, 2016, which is subsequent to the passing of the ESSA. The time limitations were chosen not only in relation to the passing of the ESSA on December 11th, 2015, but also in relation to the school year, which normally begins in early-mid August and ends mid-late May. The key words "teachers" and "testing" were also applied to the search in order to limit the results to articles relevant to the study of ESSA (2015). 'Testing' was chosen as a keyword since one of the primary critiques of No Child Left Behind (NCLB) (2001) discussed throughout the literature (Goldstein 2011; Cochran-Smith and Fries 2001) was the increased testing, as well as the high accountability and risk for teachers associated with the testing outcomes through Adequate Yearly Progress goals. The dataset for this initial work included 88 articles, which were all published by the New York Times.

After collecting the textual data, I utilized the SentimentR and Syuzhet packages to analyze sentiment and emotion by utilizing valence shifters and lexicon dictionaries. SentimentR provided the main tools for sentiment analysis while Syuzhet offered the dictionary databases curated with sentiment by word. Specifically used in this initial work, “The nrc lexicon categorizes words in a binary fashion (“yes”/ “no”) into categories of positive, negative, anger, anticipation, disgust, fear, joy, sadness, surprise, and trust” (Silge 2017). In contrast to other sentiment analysis packages such as Tidyverse which utilizes a word by word, or ‘token’, method, SentimentR analyzes textual data by sentence, which allows for the use of valence shifters (Jockers 2020). The SentimentR package “attempts to take into account valence shifters (i.e., negators, amplifiers (intensifiers), de-amplifiers (downtoners), and adversative conjunctions) while maintaining speed. Simply put, SentimentR is an augmented dictionary lookup” (Rinker 2019). The main function of SentimentR provides an average sentiment score, “which can take positive or negative values and expresses the valence and the polarity of the sentiment” (Rinker 2019).

SentimentR also provides several tools for visualizing sentiment and emotion. Used in combination with SentimentR, the Syuzhet package is designed “for the extraction of sentiment and sentiment-based plot arcs from text” (Jockers 2020). The Syuzhet package provides tools to analyze emotional propensity by incorporating several lexicon data sets or ‘sentiment dictionaries’, such as the nrc lexicon (Mohammad 2010; Mohammad 2013). The Syuzhet package “attempts to reveal the latent structure of narrative by means of sentiment analysis” (Jockers 2020). With the importance of framing clearly established in the literature (Van Duyn and Collier 2019; Soroka et. al.

2012; Reichel 2018; Goldstein 2011), the goal of using Syuzhet was to gain a better understanding of the media's framing of teachers before and after ESSA. Furthermore, Syuzhet's emotional propensity feature is especially useful for analyzing how the media is framing teachers since Entman (2007) describes framing as "encouraging a target audience to think, *feel*, and decide in a certain way" (Entman 2007, 164).

The first analysis performed on the data set of articles from before the ESSA was passed in December 2015 (Article Set 1) was to determine the emotional propensity of the text. The headlines of the articles were not included in any of the analyses. Using the nrc lexicon provided by SentimentR, *Figure 2* displays the number of words in the 44 articles that were characterized as representing anger, anticipation, disgust, fear, joy, sadness, surprise, and trust. *Figure 2* also shows the proportion of words categorized as positive and negative. Surprisingly, given the consensus in the literature that media coverage of education topics was pervasively negative (Shine and Rogers 2021; Goldstein 2011; Reichel 2018), the results indicate that there were more positive correlated words than negative. The high number of words associated with trust and anticipation is also interesting due to the literature regarding demands for increased teacher accountability (Goldstein 2011), which could be described as signaling distrust in the teaching profession. Fear, joy, and sadness were the next most frequent emotions analyzed in Article Set 1 behind trust and anticipation.

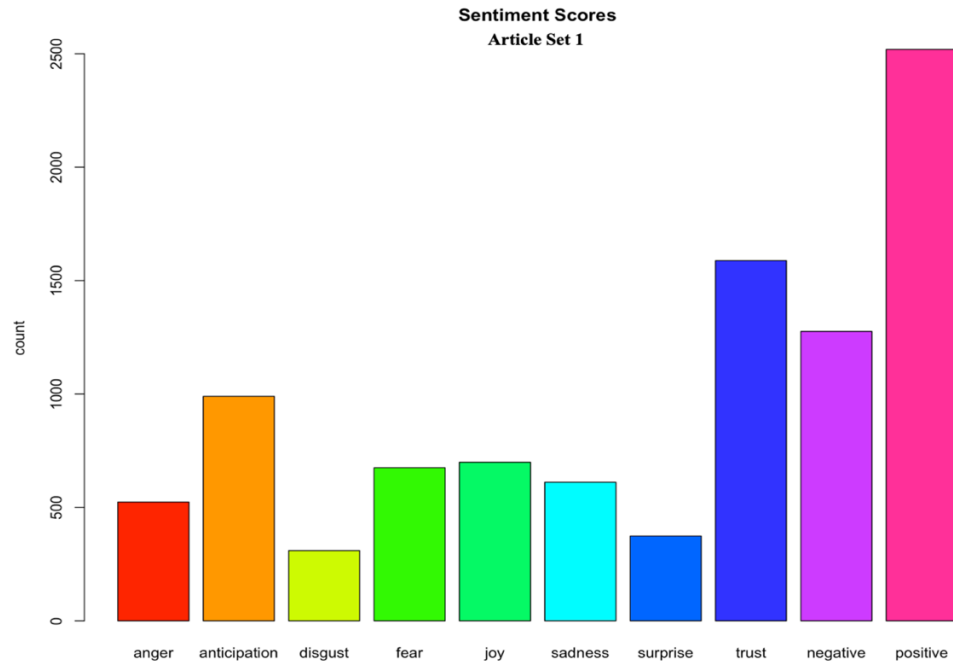


Figure 2. New York Times Article Set #1 Sentiment Scores

The results of the sentiment analysis performed on Article Set 2 produces surprisingly similar results to Article Set 1. *Figure 3* (below) depicts the frequency of emotion by word count for Article Set 2. At a glance, Article Set 2 was generally more positive than negative and, parallel to the results from Article Set 1, had higher levels of words categorized as trusting and anticipatory. Fear and joy were the next most frequently associated emotions. While there are obvious similarities between the results of Article Set 1 and 2, upon further comparison there are subtle differences. Different than the extremely similar levels of joy and fear represented in *Figure 2*, *Figure 3* illustrates a wider gap between the two emotions with fear having decreased from significantly above 500 word counts in Article Set 1 to less than 500 in Article Set 2. However, it is notable that this phenomenon could be the result of differing total word counts between the two data sets. Another example would be the difference in positive

word counts between the two data sets with Article Set 1 having 2,500+ positive word associations and Article Set 2 only having 2,000.

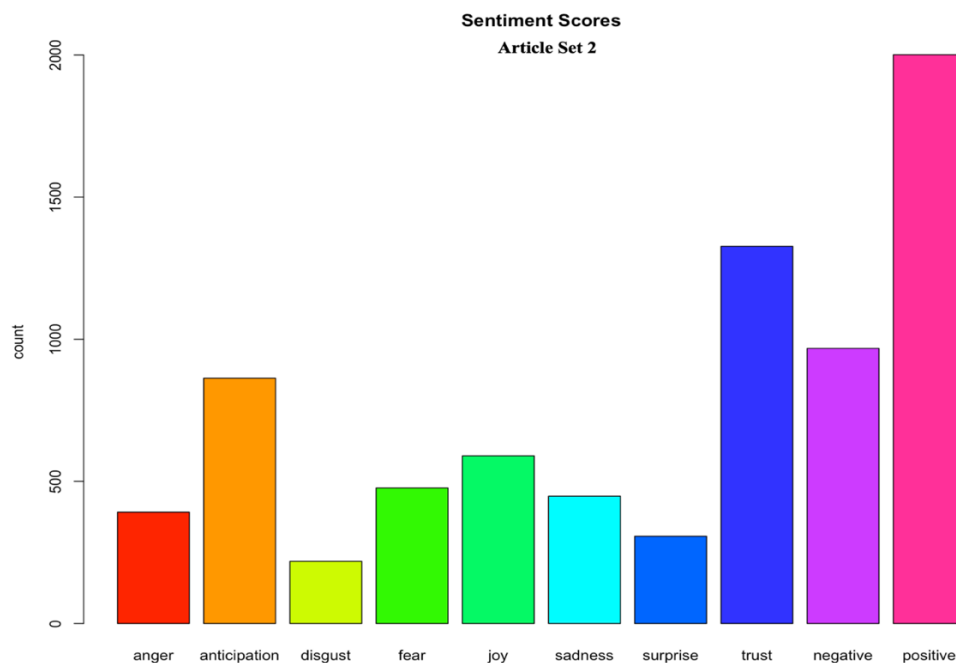


Figure 3. New York Times Article Set #2 Sentiment Scores

This initial research was very limited by the lack of a time series component to accurately analyze when and how the sentiment score and emotional propensity of the media's depiction, or framing, of teachers changed. The current study addresses that limitation by incorporating several time-series elements into the final analyses. Additionally, the ESSA (2015) wasn't covered by the media nearly as much or for as long as other significant events to education policy such as, teacher union strikes or widespread school closures/reopenings, which resulted in a limited amount of data for the initial study. More data is made available for analysis by focusing on large-scale teacher union strikes in 2019 and school closures and reopenings during the COVID-19 pandemic. However, these initial results offer an interesting perspective to inform the results of the current analysis.

CHAPTER V – DATA

Building upon my initial findings, this study utilizes a novel article set of 2,675 articles from the three largest school districts in the United States according to the National Center for Education Statistics, Chicago Public School District (CPSD), Los Angeles Unified School District (LAUSD), and New York City Public School District (NYCPSD), to analyze the media coverage of teachers' unions in the school reopening process. Such a data set doesn't exist anywhere and required a meticulous collection process, which is detailed further below. Based on the expectation that the media would be more likely to focus school districts where education policy issues would have the biggest impact on the greatest number of students, parents, and teachers, I chose the three largest school districts in the U.S. CPSD, LAUSD, and NYCSD have a combined enrollment of over 1.8 million students according to data by the National Center for Education Statistics. Furthermore, while the school districts were chosen based on the expected availability of media data, CPSD, NYCPSD, and LAUSD have varying levels of teacher union strength and laws prohibiting public sector union strikes, which provides the opportunity to analyze the influence of teacher union strength on media framing and school reopening policies. In addition to the media, data, as outlined in the expectations section, I collected 1.) the number of school board meetings per month, per school district; 2.) cumulative COVID-19 case counts per month, per county; and 3.) scaled school reopenings measures by closed (0), remote (1), hybrid (2), and fully in-person (3). Descriptive statistics for all variables included in the subsequent analysis are depicted in *Figures 4-6*. The “Anti-Teachers/Teachers Union”, “Neutral”, and “Pro-

Teachers/Teachers Union” statistics in *Figures 4-6* are the result of the primary natural language processing analysis, which will be discussed in subsequent sections.

Descriptive Statistics - Chicago Public School District

Statistic	N	Mean	St. Dev.	Var	Min	Max
Anti-Teachers/Teachers Union	27	0.3336	0.0847	0.0072	0.1299	0.4641
Neutral	27	0.2799	0.0559	0.0031	0.1765	0.4109
Pro-Teachers/Teachers Union	27	0.2559	0.0664	0.0044	0.1742	0.4265
COVID-19 Cases*	27	200902.3	278593.6	77614408546	0	1080784
School Reopening	27	2.0741	0.9971	0.9943	0	3
School Board Meetings	27	1.3703	0.7415	0.5499	1	4

* Cumulative case counts

Figure 4. Descriptive Statistics for Chicago Public School District

Descriptive Statistics - Los Angeles Unified School District

Statistic	N	Mean	St. Dev.	Var	Min	Max
Anti-Teachers/Teachers Union	12	0.3175	0.0672	0.0045	0.2332	0.4665
Neutral	12	0.2780	0.0524	0.0027	0.2087	0.3634
Pro-Teachers/Teachers Union	12	0.2298	0.0413	0.0017	0.1757	0.3149
COVID-19 Cases*	12	384075.5	547131	299352286418	0	1233723
School Reopening	12	2.333	0.8876	0.7878	0	3
School Board Meetings	12	6.166667	2.790	7.787	3	12

* Cumulative case counts

Figure 5. Descriptive Statistics for Los Angeles Unified School District

Descriptive Statistics - New York City Public School District

Statistic	N	Mean	St. Dev.	Var	Min	Max
Anti-Teachers/Teachers Union	13	0.2891	0.0676	0.0046	0.1141	0.3879
Neutral	13	0.3176	0.0933	0.0087	0.2076	0.5739
Pro-Teachers/Teachers Union	13	0.2345	0.0532	0.0028	0.1358	0.3118
COVID-19 Cases*	13	402094.6	361429.4	130631227334	0	1083700
School Reopening	13	1.6923	0.9473	0.8974	0	3
School Board Meetings	13	1.0769	0.2773	0.0769	1	2

* Cumulative case counts

Figure 6. Descriptive Statistics for New York City Public School District

Research by the Fordham Institute (see Winkler et. al. 2012) analyzed the strength of teachers’ unions in all 50 states in five areas: resources and membership, involvement in politics, scope of bargaining, state policies, and perceived influence. The research report indicated that, out of the four school districts included in this study, LAUSD in California has the strongest teacher union (6th out of 50), followed by CPSD in Illinois (8th), and NYCSD in New York (9th). Significant for the purpose of analyzing the media’s portrayal of teachers unions, the ‘perceived influence’ of the three school districts varies widely with LAUSD ranking 1st, CPS ranking 28th, and NYCSD ranking 21st. ‘Perceived influence’ measures “how influential the unions are in comparison to other entities in the state, whether the positions of policymakers are aligned with those of teacher unions, and how effective the unions have been in stopping policies with which they disagree” (Winkler et al., 2012). The variance in union strength amongst the school districts included is beneficial because results of this thesis could illustrate a difference in media

coverage based upon the ‘perceived influence’ of the union on school reopening policy negotiations. However, since the measure of union strength from the Fordham Institute is stable over time, it was not included in the statistical analyses but, will be used to add context to the discussion of the results. *Figure 7 (below)* represents the rankings of teacher union strength by state for Illinois, California, and New York, as well as the number of schools and total enrollment for Chicago Public School District, Los Angeles Unified School District, and New York City Public School District. While all three states included in the analysis are ranked highly in overall teacher union strength, there is a wide variance in perceived influence. Furthermore, New York prohibits public sector union strikes, which impacts the teachers union’s ability to collectively bargain or strike.

School District Demographics and Teacher Union Rankings

State and Included School District	Perceived Influence	Right to Strike	Involvement in Politics	Overall Rank	Number of Schools	Total Enrollment
Illinois (Chicago Public School District)	28th	Yes	12th	8th	649	341,382
California (Los Angeles Unified School District)	1st	Yes	18th	6th	782	460,633
New York (New York City Public School District)	21st	No	13th	9th	1,608	1,094,138

Figure 7. School District Demographics and Teacher Union Rankings

In order to analyze the impact of school reopenings, the data set covers a larger time period from January 2019 to January 2022, which enables a comparative aspect from before the COVID-19 pandemic. The portion of the data set regarding school reopenings was compiled using ProQuest’s U.S. NewsStream database by searching “____ School District Reopening” (AND) “Teachers’ Unions” in the time frame of May 2020 through January 2022, which captures two back to school months of August in very

different stages of the pandemic. The portion of articles used for comparison was also compiled using ProQuest's U.S. NewsStream database by using "____ School District" (AND) "Teachers Union". The searches were limited by source type and location to exclude the majority of duplicate articles.

In total, the dataset is almost 9,000 pages of text equaling roughly 3.5 million words. The dataset includes 2,835 articles broken down into 1,516 articles regarding Chicago Public Schools, 680 articles from Los Angeles Unified School District, 479 articles from New York City Public Schools, and only 160 articles concerning Miami-Dade County Public School District. The large number of articles surrounding Chicago Public School District's reopening policy and Chicago Teachers Union is relatively unsurprising given the historical strength and influence of the Chicago Teachers Union, which was seen when the CTU staged a heavily publicized strike involving more than 26,000 union members for seven days in 2012 during a breakdown in the contract negotiation process (Ashby and Bruno 2016). CTU and the United Teachers of Los Angeles also held strikes in 2019, which is a partial explanation for articles concerning LAUSD and CPS making up over half of the dataset. The same reasoning can be applied to understand why there were so few articles concerning Miami-Dade. Florida ranked last in teacher union strength according to the Fordham Institute report so, it is understandable why the search through ProQuest for articles discussing teachers unions did not yield many results. MDCPSD was one of a few school districts in Florida given permission to start the 2020-2021 school year fully remote, amid pressure from Governor DeSantis to open in-person, due to high positivity rates in the county. The school district opened with a staggered approach and an option for continuing remote learning on

October 5th, 2020 (Strauss 2020). Upon executing the first attempt at running the natural language processing model, it became clear that the limited amount of data for Miami-Dade was causing issues. By removing the Miami-Dade data, the model was able to run fully. Although Miami-Dade will not be included in the final results of the study, the limited data is a result in itself. Since Florida ranked last in overall teacher union strength, school reopening policy negotiations weren't covered by the media because there weren't any negotiations. The limited data from Miami-Dade illustrates the media's role in making the influence of teacher union strength on policymaking a salient issue.

Unfortunately, the raw data from ProQuest needed to be cleaned, segmented into individual documents and, renamed using a specific format recognized by the natural language process algorithm. In addition to not being able to download a result list as individual files, ProQuest limits the number of articles downloadable at once to 400. Thus, for school districts with more than 400 search results, multiple large files had to be downloaded and segmented into individual articles since the raw ProQuest file contained all 400 articles from the search results list. The segmenting was performed using the R 'quanteda' package, which provides a function to segment large amounts of textual data based on a key. In the raw file from ProQuest, the individual articles were assigned a document number prefixed with the word 'document', which was utilized as the key to signal the beginning of a new document to be segmented. This process had to be repeated six times for Chicago Public School District, three times for New York City Public Schools, four times for Los Angeles Public Schools, and twice for Miami-Dade, since there were multiple files from two different searches through ProQuest. Once the raw data was segmented into individual articles, the files had to be named in a specific format

warranted by the natural language processing algorithm. The file names include the articles' publishing date, the school district, and a document number, which allows for a time-series component of analysis.

The school districts in this study varied in when the schools reopened and how they reopened. In this study, 'reopening' was scaled as a variable as closed (0), remote (1), hybrid (2), and fully in-person (3). With this scale in mind, all three school districts were remote until at least the end of August 2020. NYCPSD was the first school district to reopen in a hybrid format in September of 2020, although after just 8 weeks of instruction, amid rising positivity rates in the city, the school district went fully remote in November 2020 (Heyward 2021). LAUSD was one of the last school districts to begin the process of reopening schools. In April of 2021, LAUSD began a staggered approach to return students to in-person learning with a hybrid schedule mixing online learning days and in-person days as well as an option for students to remain fully online. In August 2021, LAUSD opened for fully in-person instruction with an online option for a small number of students with extremely extenuating health risks. Finally, CPSD, which had one of the most contentious negotiation processes, reopened with a staggered, hybrid approach for K-5 students on March 1st, 2021, 6th-8th grade students a week later on March 8th, and high school students returning over a month later on April 19th, 2021.

Figure 8 highlights the variance in media coverage of the three school districts' school reopenings included in the study from 2019-2022. The most dramatic increase article counts corresponds media coverage of the United Teachers of Los Angeles strike in January of 2019 and the Chicago Teachers Union strike in October of 2019. Additionally, a significant increase in article counts concerning CPSD occurred from

December 2020 to March 2021 due to a contentious school reopening policy negotiation process that was heavily publicized. There is also notable increase in articles published shortly before NYCPSD's partial reopening in September 2020 and LAUSD's reopening in April 2021. *Figure 8* illustrates that the media intensifies coverage of strikes and other education policy disruptions, potentially raising the saliency of these issues, which will be discussed further in the results section.

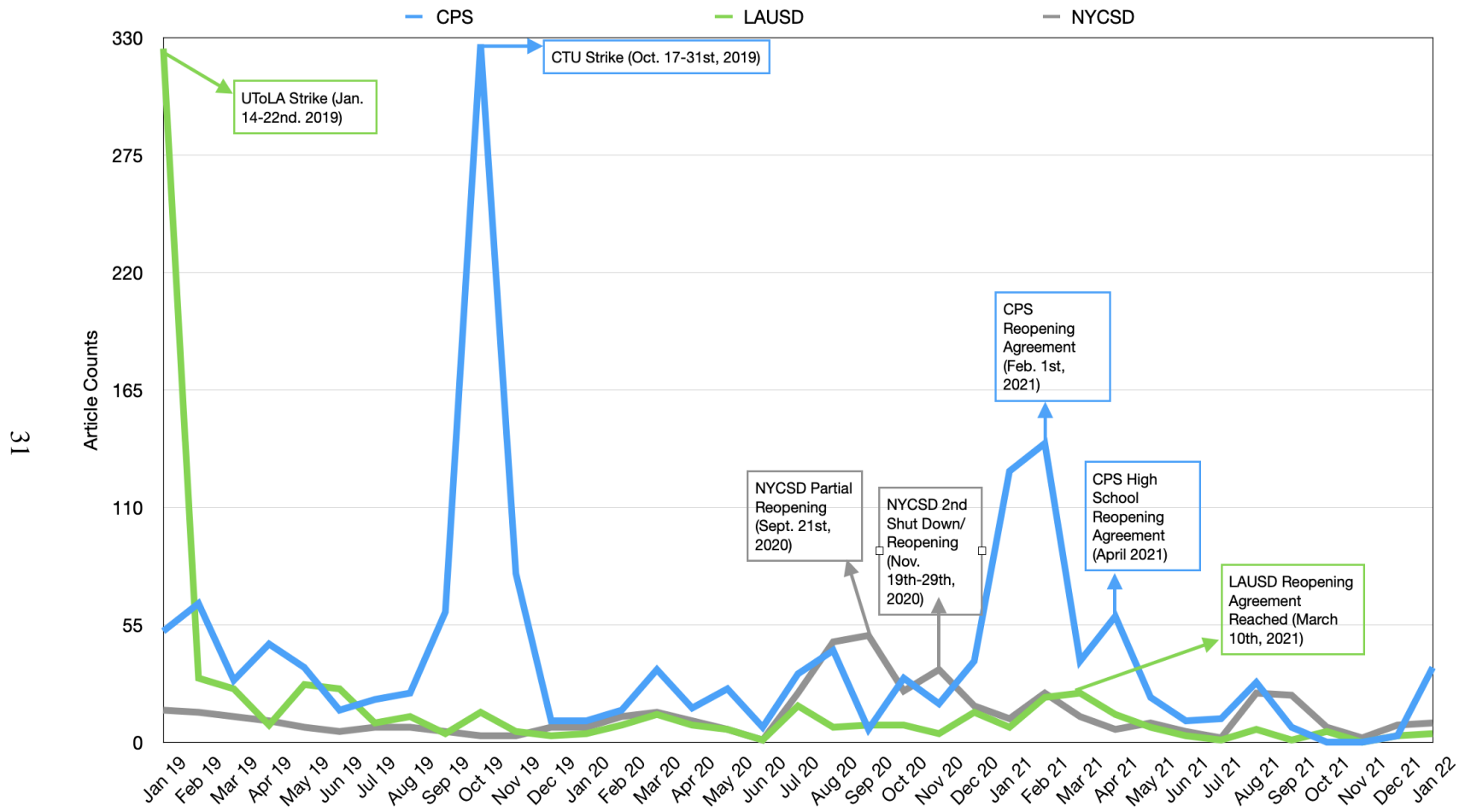


Figure 8. Timeline of Article Counts by School District with Notable Events

CHAPTER VI – METHODS AND RESULTS

Natural Language Processing Methods

An evaluation of the media’s framing of teachers’ unions throughout the process of school reopening policy negotiations will be performed using a natural language processing method of automated nonparametric content analysis introduced by Hopkins and King (2010). The methods introduced by Hopkins and King (2010) “take as data a potentially large set of text documents, of which a small subset is hand coded into an investigator-chosen set of mutually exclusive and exhaustive categories” (Hopkins and King 2010, 229-230). Importantly, the algorithm does not assign a score for each individual article in the data set, instead it measures the proportion of articles within each month that fall within the four categories (Iliev and Brandt 2019; Iliev et. al. 2019). The classification of articles by school district does pose a limitation in that it is assumed the school districts have ‘one voice’ instead of classifying by publication source, which would show the variance in coverage by media outlet.

Importantly, the articles concerning Chicago Public Schools primarily came from only three different news outlets: *Chicago Tribune*, *TCA Regional News*, and *Targeted News Service*. The remainder of the data for Chicago came from very small local media outlets and online sources, often only accounting for one or two of the articles in the data, which would make an analysis by publication unfeasible. This is also the case for New York City School District with the majority of articles coming from *New York Times*, *Wall Street Journal*, and *Targeted News Service*. Similarly, *Los Angeles Times*, *Wall Street Journal*, and *Targeted News Service* comprised the majority of the Los Angeles Unified School District data. *Figures 9-11* below show the top five publication sources

per district. Furthermore, as was the case with the Miami-Dade data, the time-series component of the method of analysis would not be able to compensate for the large portions of ‘missing’ data, meaning the numerous local media outlets that only published one or two articles in the data. Therefore, it is a reasonable conclusion to assume the districts are speaking in ‘one voice’ instead of analyzing the articles by publication source.

Hopkins and King make an excellent point about social scientists relevant to the analysis of school districts, “Policy makers or computer scientists may be interested in finding the needle in the haystack (such as a potential terrorist threat or the right web page to display from a search), but social scientists are more commonly interested in characterizing the haystack” (Hopkins and King 2010, 230). This study is, therefore, not interested in analyzing each source of publication or each article, which would be the needle in the haystack, but rather is primarily concerned with evaluating the media coverage of school districts’ reopening processes, or the haystack as a whole.

Furthermore, the use of this method also aligns with the goal of analyzing the process of school reopening policy decisions over time, which primarily occurred at the local school district level and not the state level. Thus, the results of this study seek to characterize the media’s framing of teachers and teachers unions, in three different school districts with varying union strengths, over the entire process of school reopening negotiations as well as, highly publicized strikes in Los Angeles and Chicago in 2019.

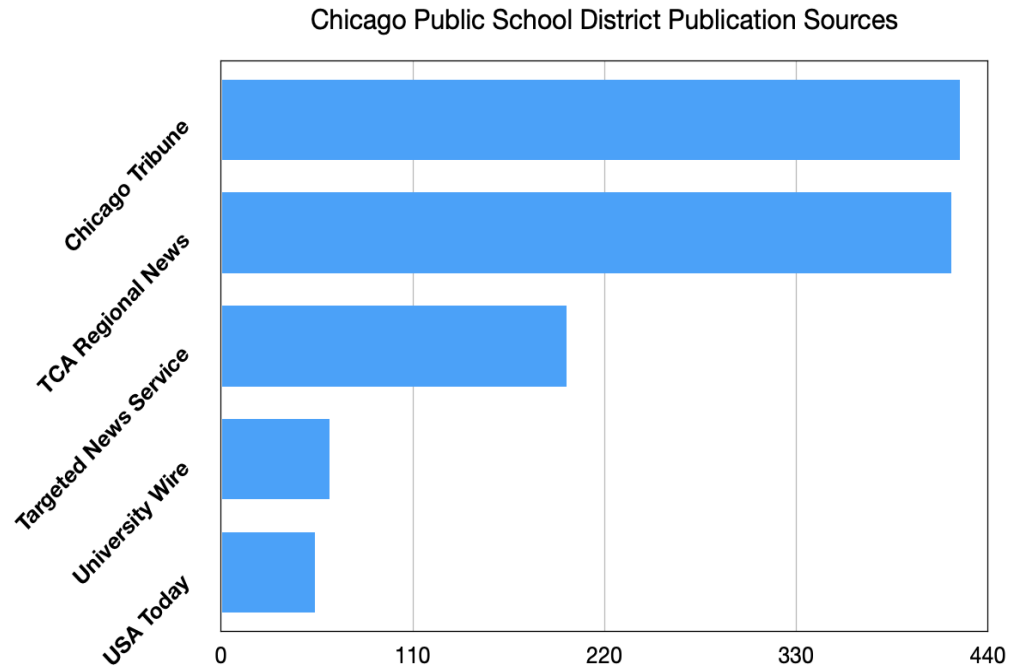


Figure 9. Chicago Public School District Media Data by Publication Source

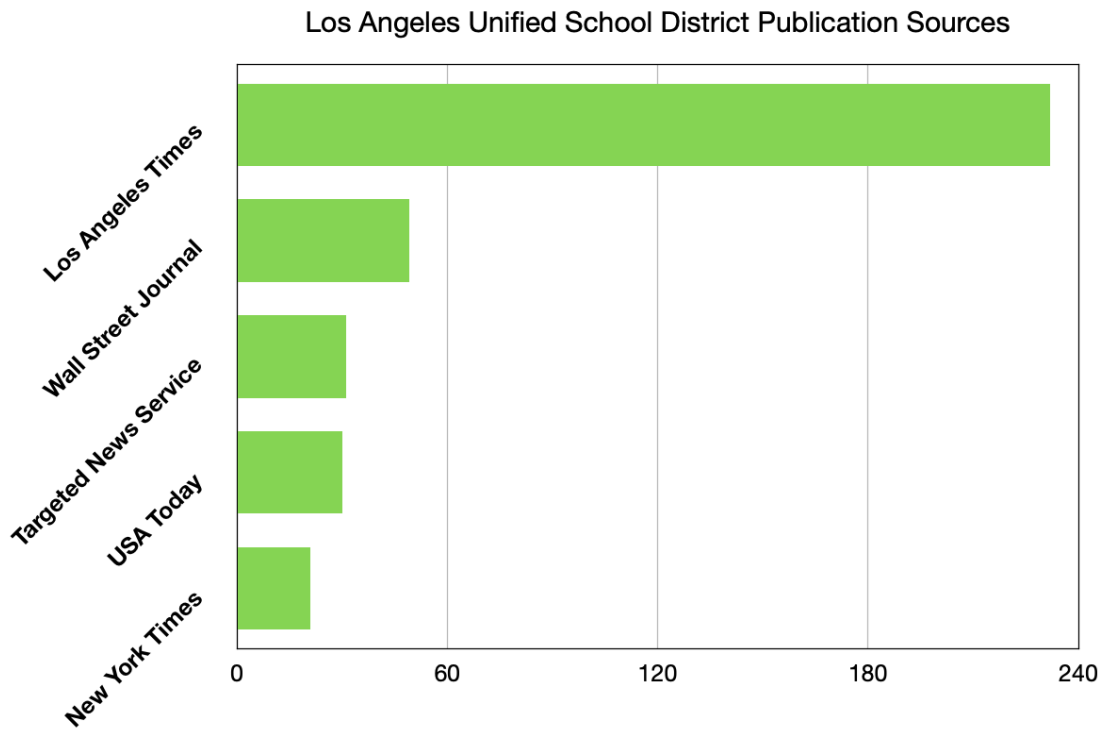


Figure 10. Los Angeles Unified School District Media Data by Publication Source

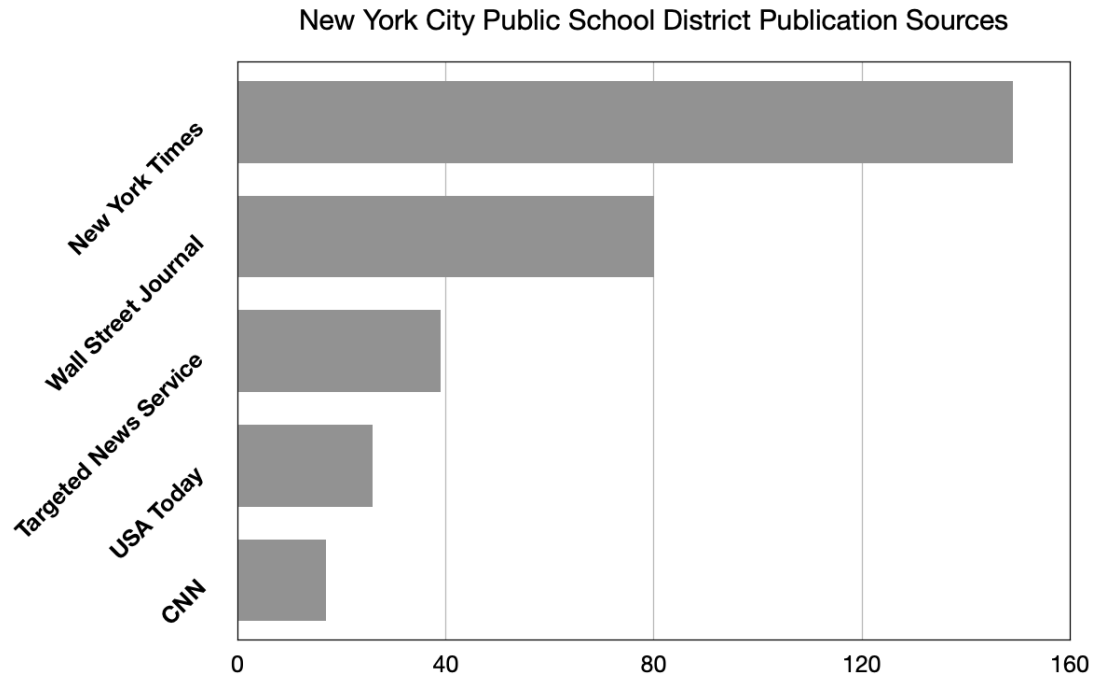


Figure 11. New York City Public School District Media Data by Publication Source

A random sample of 250 articles was hand coded into four categories – “pro-teacher’s union/teachers” (category 1), “neutral” (category 0), “anti-teacher’s union/teachers” (category -1), and “unrelated” (category 9). Out of the original 250 articles randomly selected, 133 were from Chicago Public Schools, 38 articles were from New York City School District, 65 were from Los Angeles Unified School District, and 14 were from Miami-Dade County Schools. However, after the removal of Miami-Dade due to limited data, the full hand coded sample was 236 articles. An example of a statement that would be coded as (-1) directly places teachers or teachers unions in contradiction with government officials resulting in school reopening delays such as, “The Chicago Teachers Union overwhelmingly voted to remain working from home due to concerns over the coronavirus, which defies the Chicago Public Schools’ reopening plans.” Examples of articles coded into category (-1) from before the start of the

pandemic typically framed teachers union's as disrupting student learning and making unreasonable demands such as, "Half a million students are being impacted by the first strike by Los Angeles Unified School District teachers" or "why are a handful of union and district officials deciding how to spend so many education dollars in the first place?"

Articles coded as (0), or neutral, gave equal attention to teachers' concerns with reopening plans and the spread of COVID-19 as well as parents and students' concerns over missing in-person instruction. Neutral articles also included a general description of reopening policies or informative dates and guidance for parents. Likewise, articles from before the pandemic often presented the policy goals of the various stakeholders in education policy evenly, or in conversation with one another, such as, "California's public education system depends on local schools, teachers, parents, pupils and communities working collaboratively."

Articles falling within the pro-teacher/teachers union (1) category tended to praise teachers and teachers unions for their role in promoting health and safety measures, especially in the absence of guidance from government officials such as, "he was impressed by how the school handled reopening, especially given the broader circumstances about not having clear guidance from the mayor's office." Articles falling within the pro-teacher/teachers union (1) category from before the COVID-19 pandemic, especially in LAUSD and CPSD, which both had teacher union strikes in 2019, lauded the teachers unions and teachers for their demands to improve a perceived 'failing' school system such as, "Amid a failure of leadership, the people of L.A. sided with educators."

Although the search through ProQuest specified ‘school reopening’ and ‘teachers union’ articles unrelated to schools, usually COVID-19 case updates, local election results, or weekly summaries of national news stories were still present in the test set of 250 articles, which were then coded into category (9). For example, several articles categorized as (9) within CPSD were weekly politics newsletters titled “The Spin” from the *Chicago Tribune* that provided readers with a brief run-down of national politics.

Of the 236 articles remaining in the hand coded set after removing Miami-Dade, 100 articles were coded as (-1), 59 were coded as (0), 54 were coded as (1), and 23 were coded as (9). *Figure 12* below illustrates the distribution of articles coded into each of the four categories, as well as the distribution of articles in each category by school district. The process of reading each of the original sample of 250 articles in the random test set was extremely time consuming and spanned several weeks, further justifying the use of natural language processing to analyze the complete dataset of over 2,000 articles.

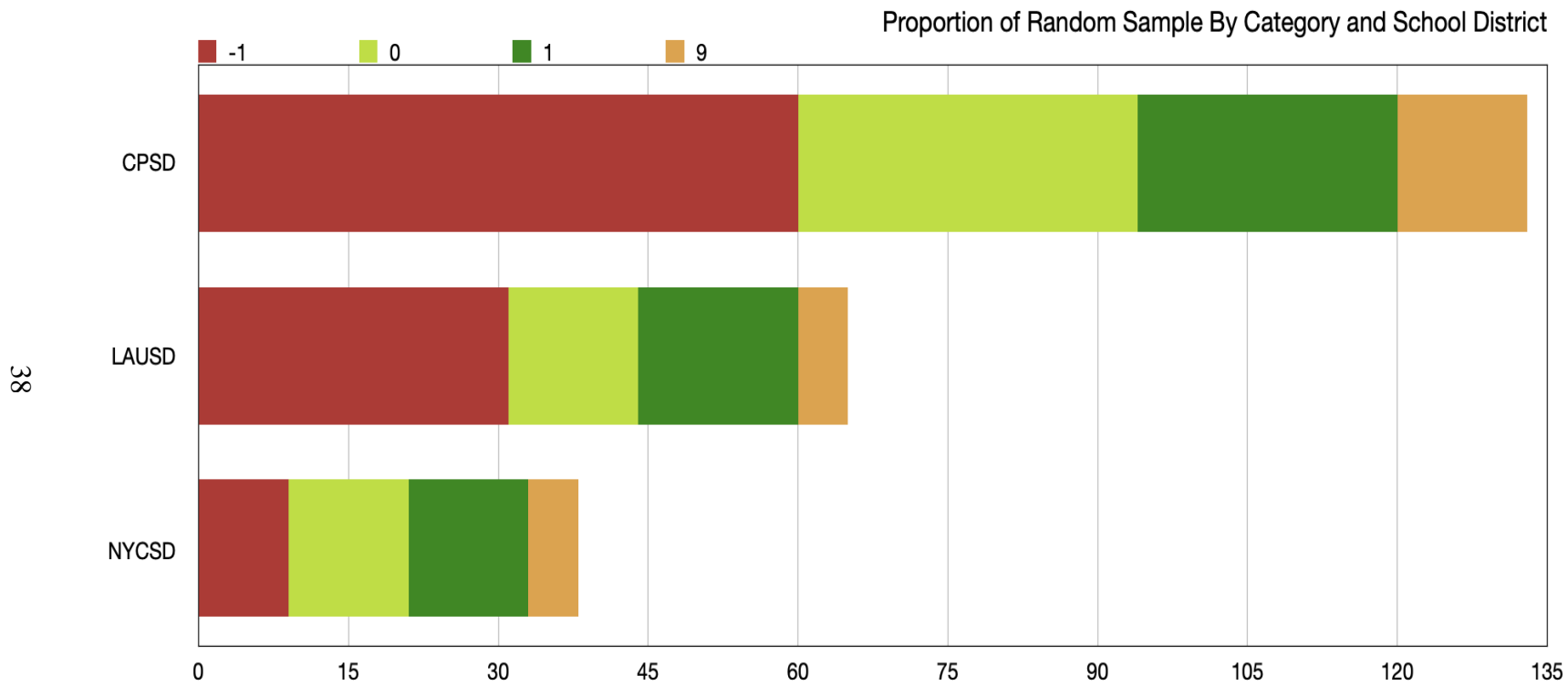


Figure 12. Proportion of Random Sample by Category and School District

Natural Language Processing Results

The timeline of the monthly scores obtained through the nonparametric content analysis resulted in *Figures 13-15*, which present several interesting points on the timeline for discussion. *Figures 13-15* show the mean rhetoric score, categorized as ‘Pro-Teacher/Teachers Union’ or ‘Anti-Teachers/Teachers Union’, per month, per school district. There were data limitations, which will be discussed further in the last chapter, resulting in fewer monthly observations for Los Angeles Unified School District (*Figure 14*) and New York City Public School District (*Figure 15*). While *Figure 13* for Chicago Public School District includes data up to January 2022, LAUSD ends in September 2021 and NYCPSD ends in May of 2021. However, this limitation is also interesting since both LAUSD and NYPSD had both reopened for in-person instruction by September 2021. CPSD, on the other hand, had a strikingly contentious reopening policy disagreement, starting in November of 2021 and lasting until the end of January 2022, between CTU wanting to close schools as positivity rates increased due to the Omicron variant. The disagreement between CTU and the Chicago local government resulted in CPSD having the most media data for analysis through January 2022 out of all three districts.

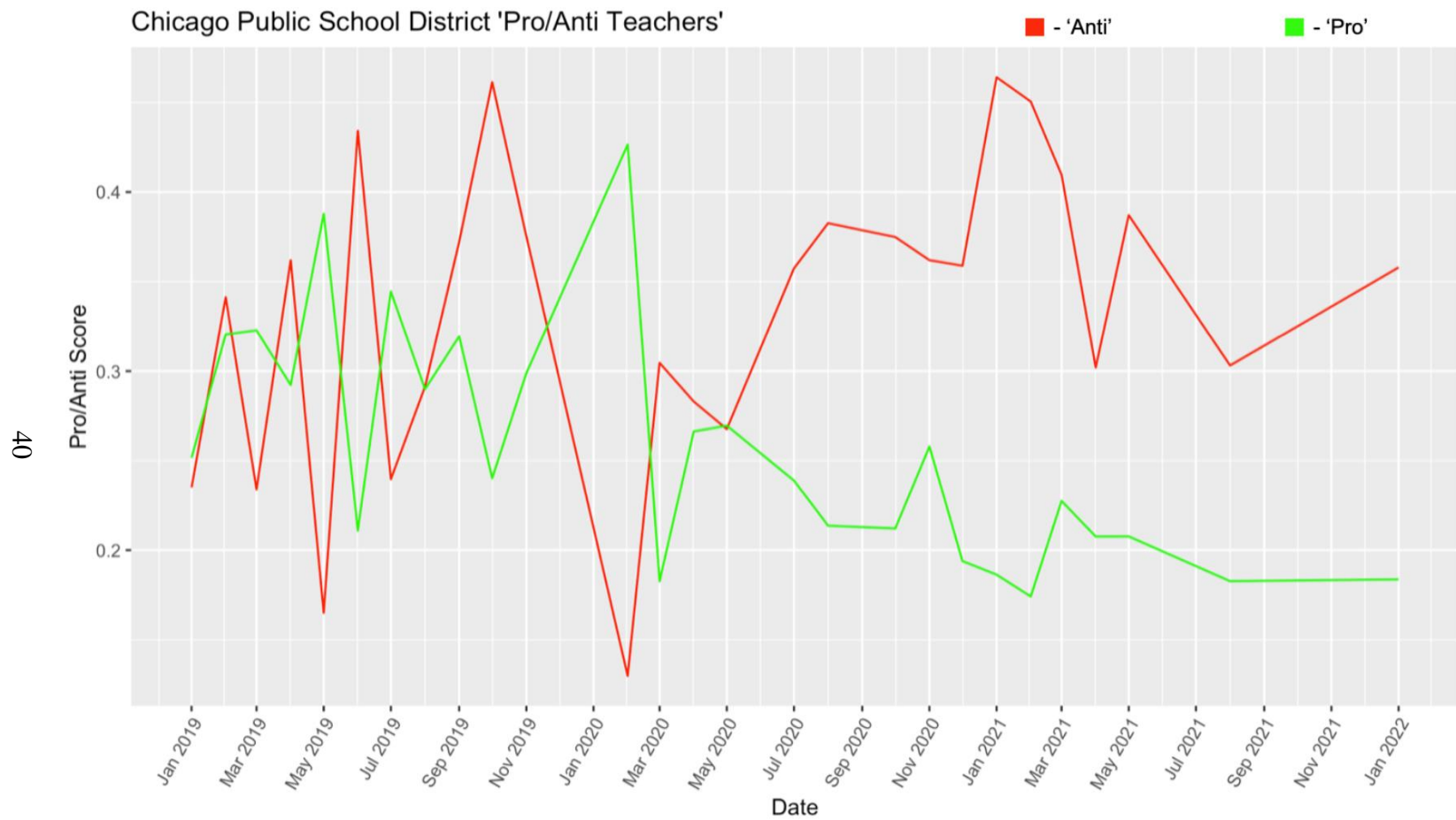


Figure 13. Chicago Public School District Average Pro/Anti Score by Month

One of the first, and arguably most prominent findings that need to be discussed further is the dramatic spike in ‘Anti-Teachers/Teachers Union’ rhetoric by the media in October of 2019. It’s apparent that the CTU strike, which lasted from October 17th - 31st, 2019 produced a significant ‘Anti-Teachers/Teachers Union’ response in the media. Although the current study is focused on analyzing the media’s rhetoric towards teachers and teachers unions during the COVID-19 pandemic, the noticeable increase in ‘Anti-Teachers/Teachers Union’ media coverage around the 2019 strike is only paralleled by the steep increase in January 2021, when CTU went on strike against school reopening policies. The two cases taken together provide a more nuanced understanding of the media’s framing of the CTU specifically and teachers unions more broadly. Another significant result portrayed in *Figure 13* is how ‘Anti-Teachers/Teachers Union’ rhetoric in the media is consistently higher than ‘Pro-Teachers/Teachers Union’ rhetoric after initial school closures due to COVID-19 in March 2020. However, there is a slight decrease in the average ‘Anti-Teachers/Teachers Union’ rhetoric in April of 2021, which could be related to agreement between the CTU, Chicago local government, and CPSD administration to reopen high-schools for fully in-person instruction.

The increase in ‘Pro-Teachers/Teachers Union’ rhetoric from November 2019 to the peak in February 2020 provides an unexpected result given the large-scale strike in October of 2019. However, the literature on the media’s framing of strikes argues that in order for a strike to achieve its’ goals, the strike must garner significant public support and sympathy (Lyon 2021). The CTU strike in October of 2019 took place amidst a number of significant external political events. The strike occurred only months after newly elected Mayor Lori Lightfoot took office, in the aftermath of numerous strikes and

walkouts by teachers and teachers unions across the country in 2019, as well as in the early phases of the 2020 presidential election campaign season. Using novel survey data, Hertel-Fernandez et. al. (2021) found the impact of the wave of teacher union action from 2018-2019 on broad public was “large, direct, and positive”, even nearly a year after they occurred (Hertel-Fernandez et. al. 2021, 74). Furthermore, the literature argues that “public sector strikes can increase support for workers and unions more generally, possibly by emphasizing the public goods that unions provide” (Lyon 2021; Hertel-Fernandez et. al. 2021). The goals of the 2019 CTU strike included “full-time nurses, social workers and librarians in all city schools, expanded counseling services, and recruitment of more black and Hispanic teachers” (Smith and Davey 2019). These demands fit well within the positive framing of teacher union action as seeking to address “systemic resource gaps” (Lyon 2021; Bulkley and Gottlieb 2017), which promotes an image of teachers as deserving. The upcoming 2020 Presidential election also provided the 2019 CTU strike the opportunity for presidential candidates to show solidarity with the union and possibly gain the endorsement of the American Federation of Teachers, which includes the over twenty-five-thousand-member Chicago chapter (Ruthhart and Perez Jr. 2019). With the support of then-candidates Bernie Sanders, Joe Biden, and Elizabeth Warren, the goals of the CTU strike were potentially legitimized in the media through statements of support by the candidates such as “Everyone in America should support you in this strike” by Elizabeth Warren (Ruthhart and Perez Jr. 2019). Finally, the beginning of an increase in ‘Anti-Teachers/Teachers Union’ from August 2021-January 2022 could be due to increasing COVID-19 cases caused by the Omicron variant and increasing pressure by the CTU to close schools.

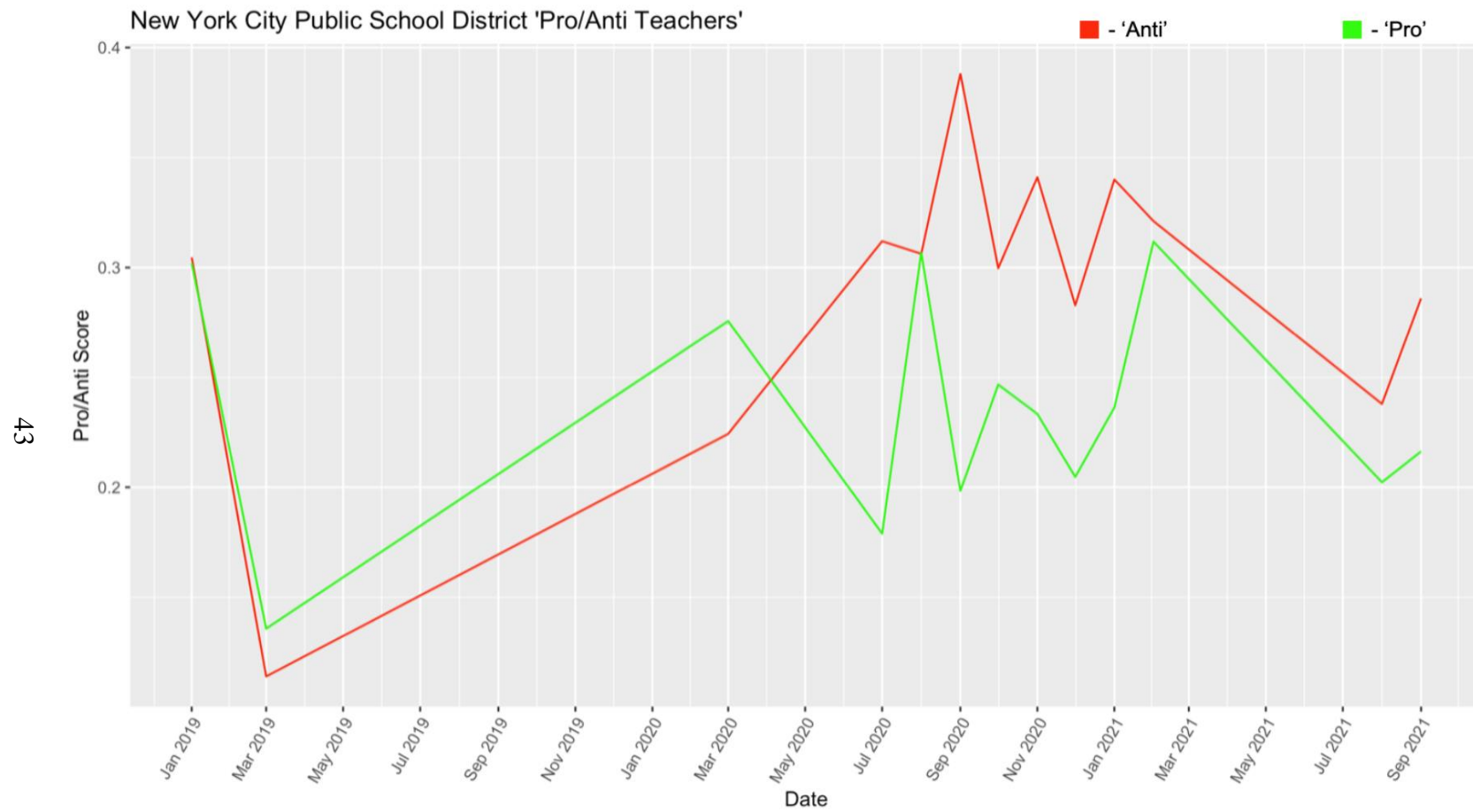


Figure 14. New York City Public School District Average Pro/Anti Score by Month

While the average rhetoric results from the New York City School District, illustrated in *Figure 14*, are significantly less dramatic in 2019 than Chicago, this is unsurprising given that NYCPSD has a much weaker teacher union presence due to Right to Work laws that prohibit public sector strikes. Therefore, while teachers unions in both CPSD and LAUSD went on strike in 2019, teachers and teachers unions in NYCPSD did not, which resulted in less media data from NYCPSD in 2019 in comparison to CPSD and LAUSD. The broadly ‘Pro-Teachers/Teachers Union’ average rhetoric until March 2020 may be the result of a combination of limited data and the comparatively stable labor relations in NYCPSD juxtaposed to large-scale strikes in numerous other districts including CPSD and LAUSD. However, the average ‘Pro-Teacher/Teachers Union’ rhetoric scores decrease rapidly after initial school closures due to COVID-19 in March 2020. Interestingly, there was a spike in ‘Anti-Teachers/Teachers Union’ rhetoric when NYCPSD reopened for in-person in September 2021. This may be the result of push-back from teachers unions in the district to reopening for in-person instruction. ‘Anti-Teachers/Teachers Union’ rhetoric increased again in November 2021 when NYCPSD was forced to close for weeks amid rising COVID-19 positivity rates. Omicron caused positivity rates to increase again in January 2021, prompting calls from the teachers’ union to close elementary schools. The results show a pattern of increasing ‘Anti-Teachers/Teachers Union’ at times when teachers unions are voicing their concerns over reopening policies put forth by Mayor Bill de Blasio. Again, interestingly, as schools reopened for fully in-person instruction in September 2021, ‘Anti-Teachers/Teachers Union’ rhetoric begins to increase.

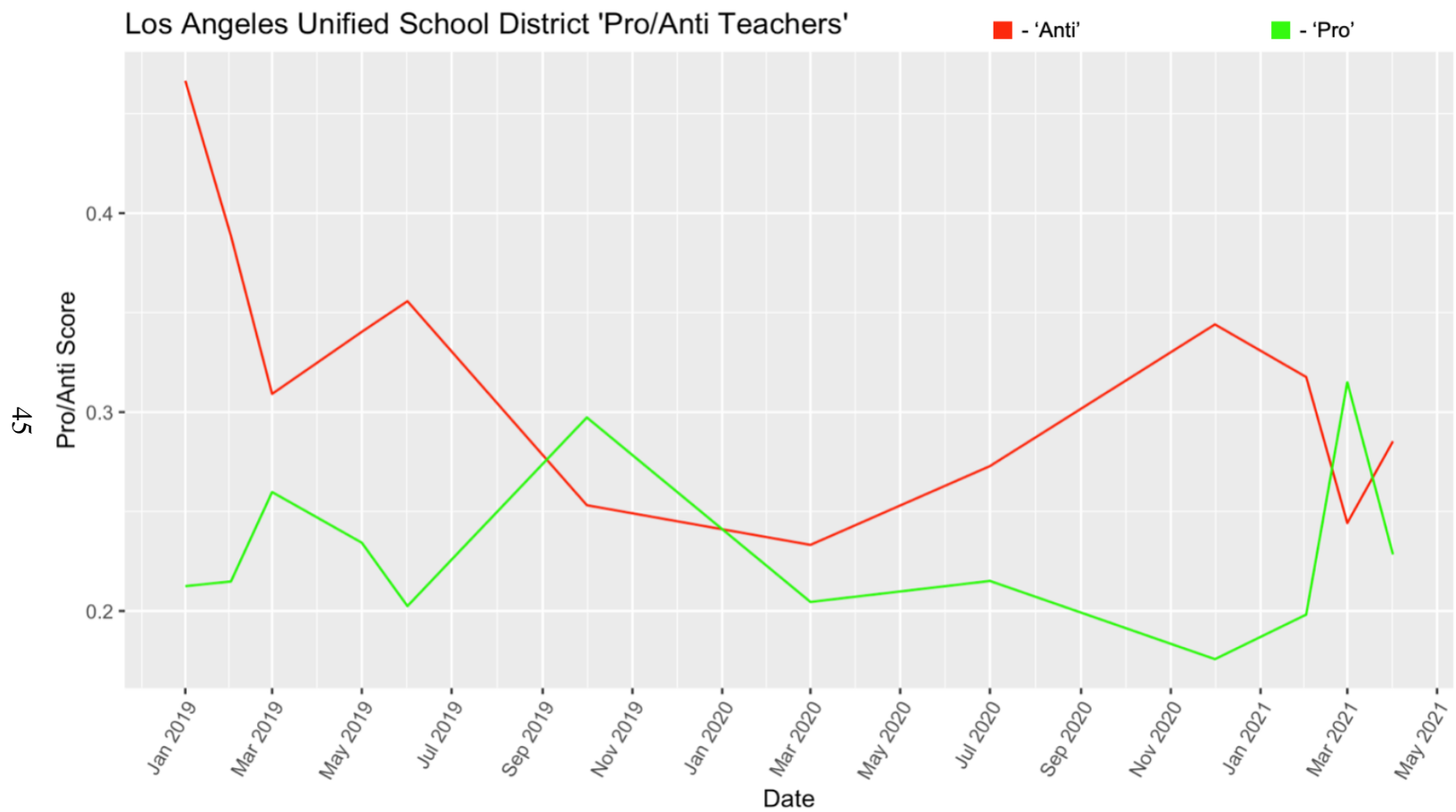


Figure 15. Los Angeles Unified School District Average Pro/Anti Score by Month

UToLA ranked #1 in the perceived influence rankings by the Fordham Institute and was one of the first school districts to strike during the wave of strikes that were a part of the #RedforEd movement. UToLA went on strike in January of 2019, which produced a significant amount of ‘Anti-Teachers/Teachers Union’ rhetoric (shown in *Figure 15* above) However, there is an increase in the average amount of ‘Pro-Teachers/Teachers Union’ rhetoric in October 2019. Teacher union strikes are only successful if their demands are met. In October 2019, Gov. Gavin Newsom signed charter school reform into law, which was one of the major demands of the January 2019 strike.

Beginning in March 2020, simultaneous to school closures, the average ‘Anti-Teachers/Teachers Union’ rhetoric increases as ‘Pro-Teachers/Teachers Union’ rhetoric decreases. The difference in ‘Pro’ and ‘Anti-Teachers/Teachers Union’ rhetoric in the media after the onset of the COVID-19 pandemic reaches its’ greatest point in December 2020. A large amount of school districts had begun to reopen by this point in the pandemic yet, LAUSD was months away from even making an agreement with UToLA to reopen schools. Hartney and Finger (2021) argue that based on survey results from Pew Research Center, by August 2021, “most families desired to see a return to some form of in-person instruction.” (Hartney and Finger 2021, 2). Therefore, the large disparity between ‘Pro-Teachers/Teachers Union’ and ‘Anti-Teachers/Teachers Union’ rhetoric in December 2021, could reflect growing frustrations with prolonged school closures in LAUSD. Somewhat unsurprisingly, the March 2021 agreement reached to reopen schools between the local government, LAUSD, and UToLA generated an increase in average ‘Pro-Teachers/Teachers Union’ rhetoric in media coverage.

Change Point Analysis

In addition to the natural language processing methods, this study utilizes segment neighborhood changepoint analysis to identify points within the time-series data that the media rhetoric regarding teachers and teachers union changed. Changepoint analysis is the process of “estimating the point at which the statistical properties of a sequence of observations change” (Killick and Eckley 2014, 2). The identified points resulting from the change point analysis are sudden variations in time series data. “Such abrupt changes may represent transitions that occur between states” and have been effectively utilized for speech and image analysis (Aminikhanghahi and Cook 2017). By using the ‘changepoint’ package developed by Killick and Eckley (2014) in combination with contextual information for all three school districts and teachers unions, the results of the changepoint analysis will offer a more nuanced understanding of the natural language processing results. While the NLP results will illustrate the average rhetoric scores by month and category per school district, the changepoint analysis results will highlight at what point in time the rhetoric changed.

Change Point Analysis Results

Figures 16- 21 illustrate the results of the secondary change point analysis for the ‘Pro-Teachers/Teachers Union’ and ‘Anti-Teachers/Teachers Union’ average rhetoric scores obtained through the natural language processing methods for CPSD, LAUSD, and NYCPSD. Combined with the previous discussion of the NLP results, the changepoint analysis results provide a more nuanced understanding how and when the media’s rhetoric towards teachers and teachers unions changed or, how the essence of the conversation changed. The time periods identified through the changepoint analysis

signify a change in the overall essence of the conversation happening in the media. The changepoint results for CPSD (*Figures 16-17*) include four changepoints, while LAUSD (*Figures 18-19*) and NYCPSD (*Figures 20-21*) include three. Initially, three points were chosen based on the thinking that one point would signify a previous strike before the onset of the COVID-19 pandemic, a second point would occur around the first wave of school closures in March 2020, and a third point would illustrate a change around school reopenings. While this choice was appropriate for LAUSD and NYCSD, the media's conversation around CPSD saw significantly more changes, resulting in four changepoints identified. Additionally, while the methods utilized for all school districts were the same, CPSD had significantly more final NLP observations than LAUSD and NYCPSD. Thus, the changepoint analysis returned four points as the recommended minimum.

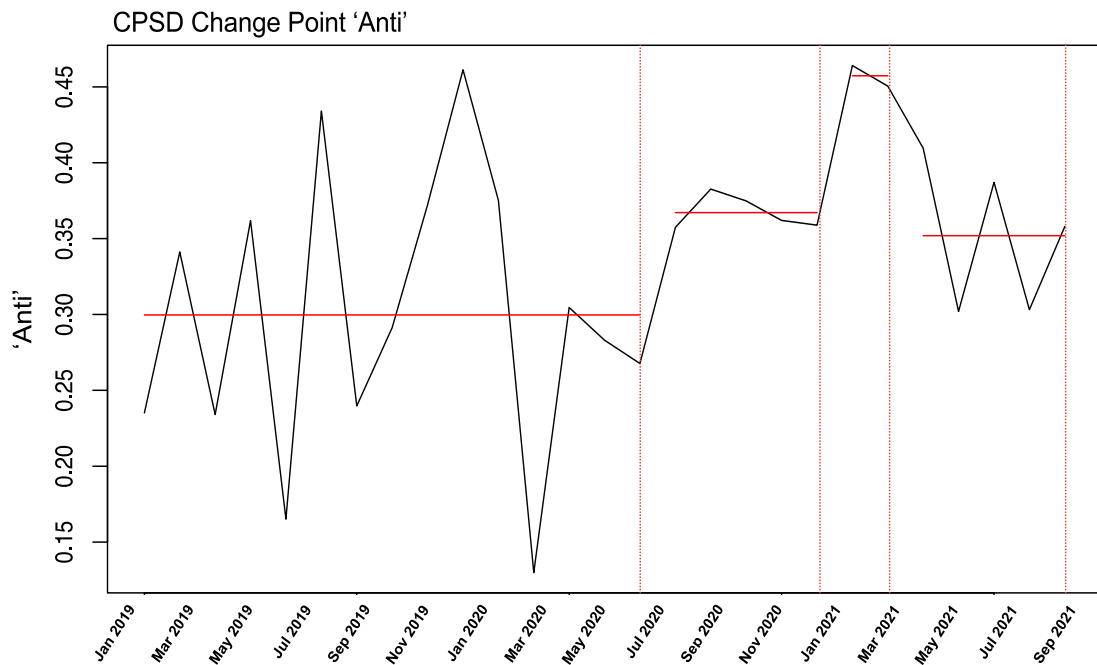


Figure 16. Chicago Public School District 'Anti' Change Point

The changepoints identified in January 2021 and March 2021 for ‘Anti-Teachers/Teachers Union’ rhetoric in CPSD, shown in *Figure 16 (above)*, are arguably the most significant for the present study. In January 2021, CTU members voted to defy the reopening plans put forth by Chicago Public School administration and the local government citing healthy and safety concerns (Issa, 2021). The contentious negotiation process between the CTU and local government officials, especially Mayor Lori Lightfoot, resulted in teachers being locked out of remote-learning options, which captured media attention. An agreement to gradually reopen schools was formalized in February 2021 and by the end of March 2021, all schools in CPSD had reopened with a limited remote-learning option. It seems clear that school reopenings would be a significant changepoint marking the beginning of a decrease in the ‘Anti-Teachers/Teachers Union’ rhetoric in the media. While the changepoints identified in January 2021 and March 2021 can be linked to significant events during the school reopening process, the changepoint identified in July 2020 is harder to contextualize. It’s possible that as the beginning of the school year was approaching and the uncertainty of whether schools would reopen in-person, hybrid, or remotely became apparent, media coverage increased.

Figure 17 (below) shows one of the identified changepoints for CPSD ‘Pro-Teacher/Teacher-Union’ rhetoric occurred in March of 2020, unsurprisingly. The average “Pro-Teachers/Teachers Union” score was increasing until March of 2020, then after the changepoint, the average “Pro-Teachers/Teachers Union” rhetoric begins to decrease. It’s probable the pandemic related school closures in March 2020 dramatically changed the ‘Pro-Teachers/Teachers Union’ rhetoric in the media. Additionally, it is equally

unsurprising that the next changepoint detected is April 2021 since schools had begun to reopen in late March 2021. However, it is interesting that the “Pro-Teachers/Teachers Union” rhetoric did not begin to increase after school reopenings in April 2021. There seems to be a pattern of importance in both the NLP results and in the changepoint results around school reopenings.

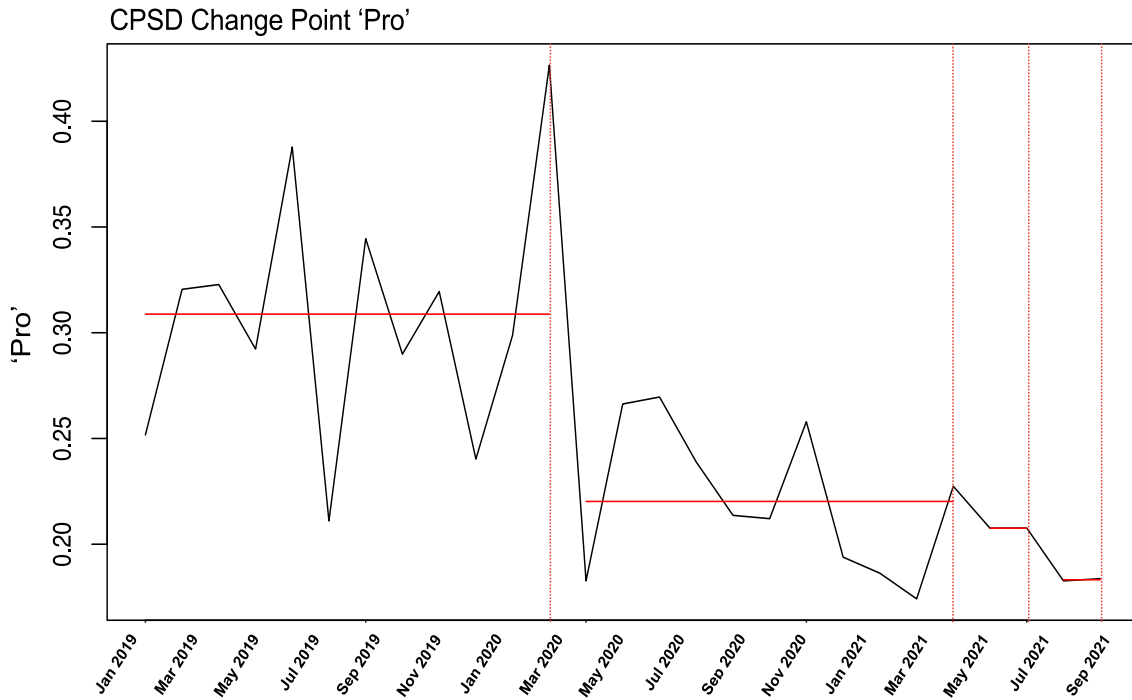


Figure 17. Chicago Public School District 'Pro' Change Point

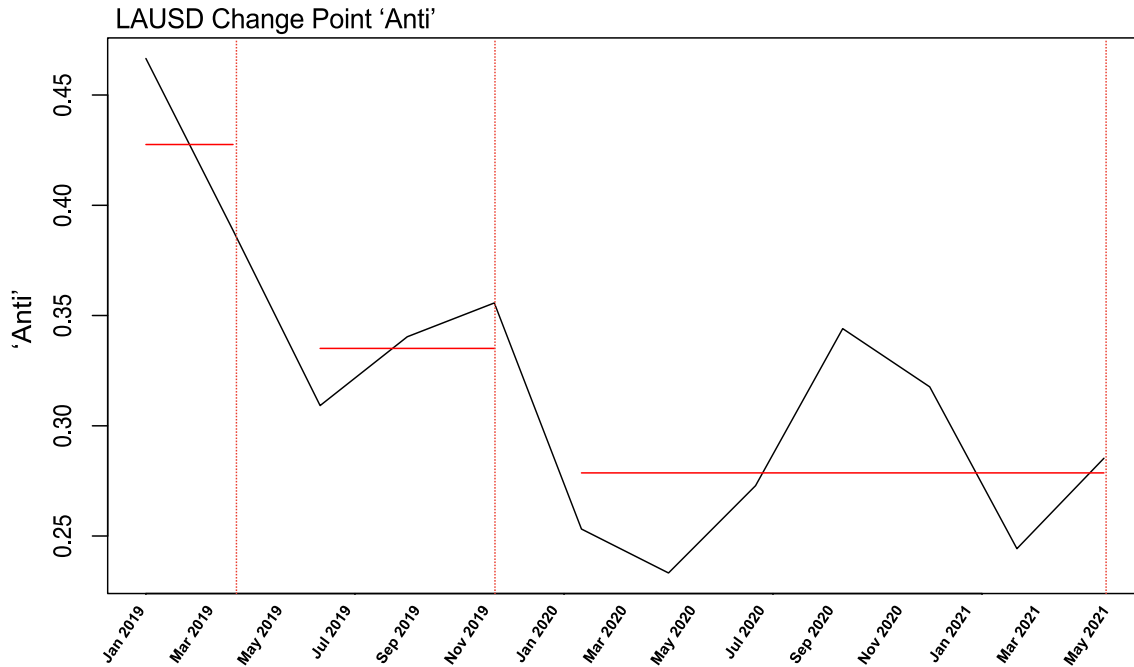


Figure 18. Los Angeles Unified School District 'Anti' Change Point

Figure 18 (above) and Figure 19 (below) represent results from the changepoint analysis on the NLP data for 'Anti-Teachers/Teachers Union' and 'Pro-Teachers/Teachers Union' rhetoric in LAUSD. The analysis detected changepoints in April 2019 and May 2021 in both the 'Anti-Teachers/Teachers Union' and 'Pro-Teachers/Teachers Union' rhetoric, which is extremely interesting. By May 2021, schools in LAUSD had begun to reopen after an agreement was reached mid-March, signaling a significant change in both 'Anti-Teachers/Teachers Union' and 'Pro-Teachers/Teachers Union' messaging. It is noteworthy that the expectation would be that the "Pro-Teachers/Teachers Union" rhetoric would begin to increase as schools reopened but based on the results in *Figure 19*, the "Pro-Teachers/Teachers Union" conversation decreased. It is possible that the "Pro-Teachers/Teachers Union" rhetoric began to increase after school reopened but, the data ends in May of 2021 for LAUSD. The

change point identified in April 2019 is harder to contextualize. However, a further investigation of the raw textual data from LAUSD in April 2019 uncovered that the majority of articles from that April and May 2019 discussed a bill introduced to the California legislature that proposed a five-year moratorium on new charter schools, which was one of the goals of the UToLA strike in January 2019. In addition to the two shared change points identified in April 2019 and May 2021, a change point in ‘Anti-Teachers/Teachers Union’ rhetoric was identified in November 2019, a month after Gov. Newsom signed the aforementioned charter school moratorium bill into law. This could be the result of the goals of the UToLA strike being formally legitimized by Gov. Newsom signing a bill on charter school reform into law, make part of the strike a success. It is significant that the “Anti-Teachers/Teachers Union” rhetoric begins to decrease a month after the charter school moratorium was signed into law.

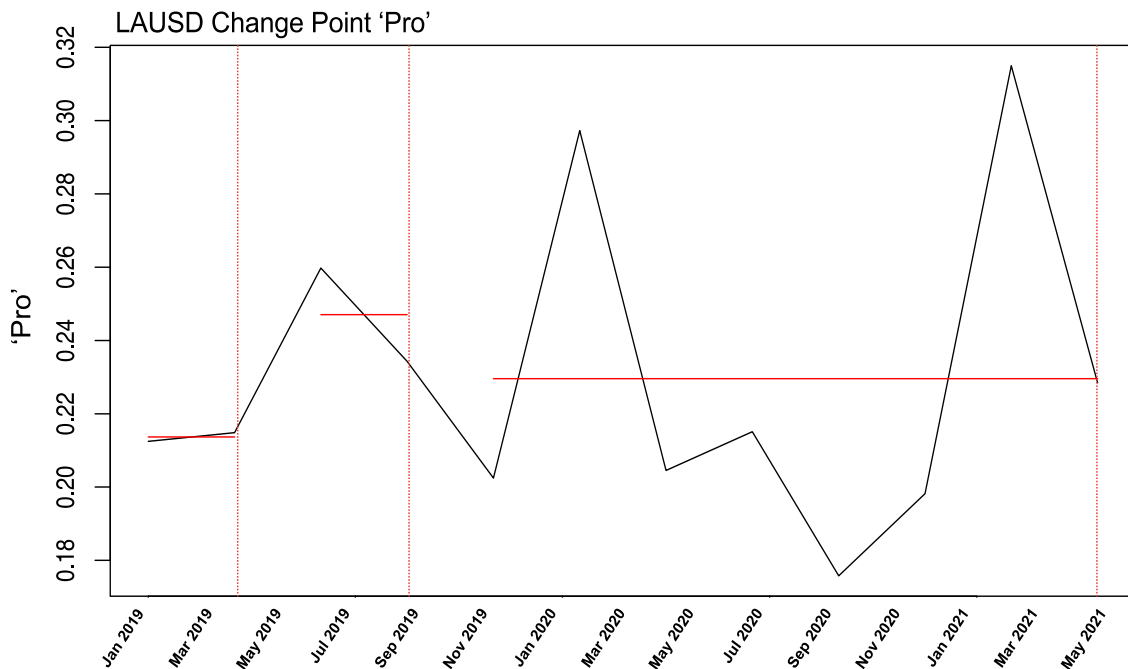


Figure 19. Los Angeles Unified School District ‘Pro’ Change Point

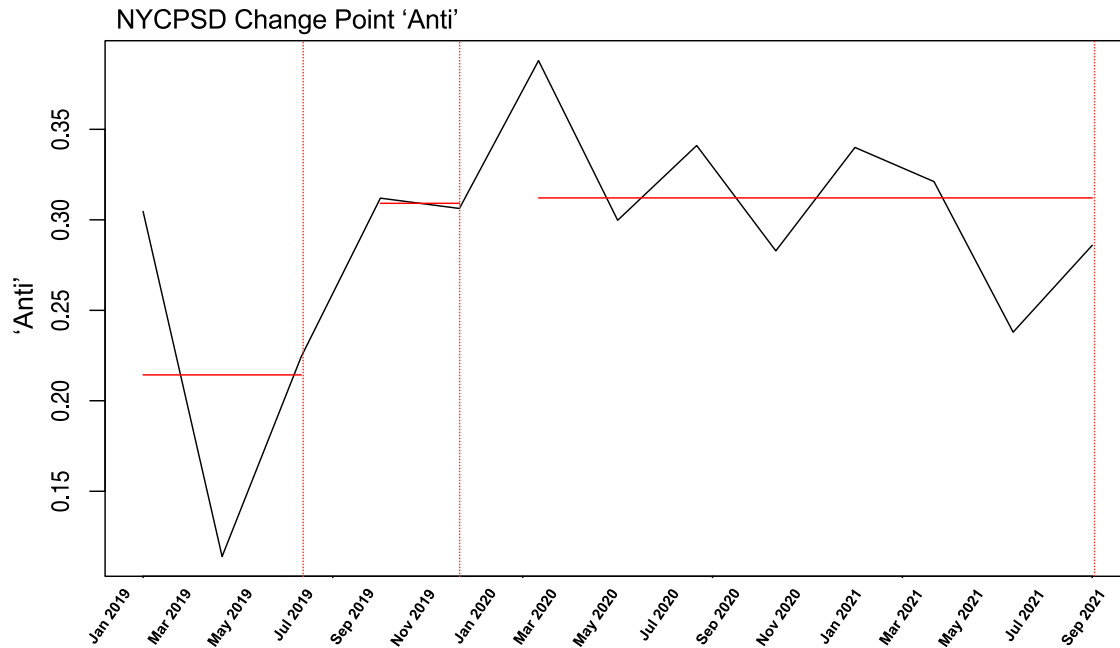


Figure 20. New York City Public School District 'Anti' Change Point

The final set of figures, *Figure 20 (above)* and *Figure 21 (below)*, illustrate the detected changepoints for rhetoric concerning NYCPSD. Similar to the changepoint results from LAUSD, the analysis for NYCPSD resulted in two shared changepoints in 'Anti-Teachers/Teachers Union' and 'Pro-Teachers/Teachers Union' rhetoric. The first common point was detected in December 2019. The second mutual changepoint identified in 'Anti-Teachers/Teachers Union' and 'Pro-Teachers/Teachers Union' rhetoric occurred in September 2021, when schools were fully reopened for in-person instruction with no remote option for students.

In addition to the two mutual changepoints in December 2019 and September 2021, the analysis detected a changepoint in July 2019 for 'Anti-Teachers/Teachers Union' rhetoric (*Figure 20*). This is an interesting result given the wave of teacher union strikes that occurred in 2019 as a part of the #RedforEd movement, since New York

prohibits public sector union strikes. Lastly, a change was detected in ‘Pro-Teachers/Teachers Union’ rhetoric (*Figure 21*) in April 2021. High schools in NYCPSD began to partially reopen in a hybrid format with a fully remote option for students in late March 2021, which follows a pattern seen in both LAUSD and CPSD of a changepoint occurring in the ‘Pro-Teachers/Teachers Union’ rhetoric as schools began to reopen.

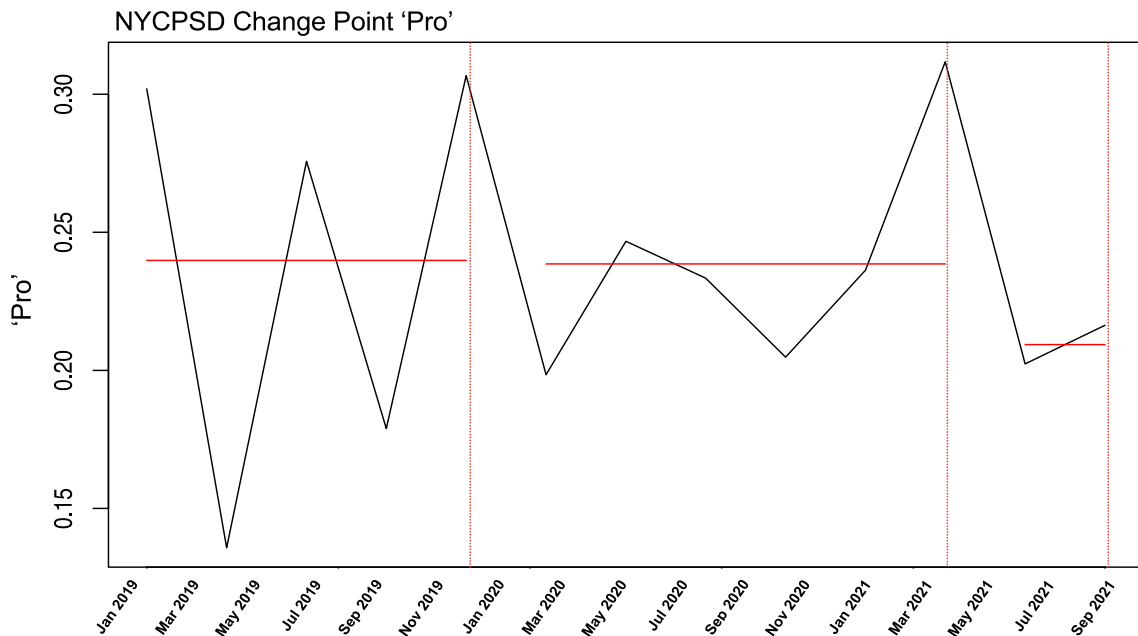


Figure 21. New York City School District 'Pro' Change Point

Results from the changepoint analysis for ‘Anti’ and ‘Pro’ rhetoric by the media across all three school districts share certain commonalities that indicate a larger narrative surrounding the actions of teachers unions, such as strikes, protests, or engagement in local policy decisions. It is clear based on both the NLP and changepoint results that strikes, school closures and reopenings, had a significant impact in not only the amount of coverage, or conversation, in the media but also, the tone of the conversation as whole. The changepoints illustrate the broader narrative of the politicization of school reopenings and teachers unions, which when considered with the NLP results, illustrate

the increasing “Anti-Teachers/Teachers Union” rhetoric surrounding strikes but paints a more complex image of the tone of the conversation around school reopenings. However, the NLP results and changepoint results do not offer an indication of the directionality of influence, or put more simply, what is influencing what.

Dynamic Linear Models

The NLP results and the results of the changepoint analysis tell a distinct story of generally higher averages of ‘Anti-Teachers/Teacher Union’ rhetoric in the media, especially when the results are presented in the context of large-scale strikes and contentious reopening negotiations. The negative trend of media framing towards teachers and teachers unions surrounding strikes and protests is relatively unsurprising. However, the changepoints identified around school closures and school reopening policies begin to tell a larger narrative of the politicization of the response to COVID-19 by school districts. Dynamic linear regression models, which enable the preservation of time-series attributes for multivariate models, were utilized to better understand the relationship between school reopening policies and the media’s framing of teachers and teachers unions. There are significant limitations, however, to using dynamic linear regression models (Knutti and Rugenstein 2015; Keele and Nelly 2006). First, there is not a time-series compatible measurement of teacher union strength available, which is necessary to address the research questions related to teacher union influence on school reopening policy and media framing. Second, the measurement of school reopening policies encompasses numerous elements such as, social distancing requirements, mask mandates, testing/vaccination requirements, quarantine guidelines. Meaning, even though the measurement of school reopening policies was scaled to signal remote, hybrid, or

fully in-person modes of instruction, the measurement is not an accurate portrayal of multifaceted policy response by school districts to COVID-19. Even though there are major limitations to the dynamic linear regression models due to the availability of data and complicated nature of COVID-19 policy, the results may provide more nuance to the comparison between school district of teacher union strength, media framing, and school reopening policies.

A dynamic linear regression model was run for each school district twice – once with the average ‘Anti-Teacher/Teacher Union’ rhetoric score as the dependent variable and another with ‘Pro-Teacher/Teacher Union’ rhetoric score as the dependent variable. Other variables included in the models were COVID-19 case count, scaled school reopenings, and school board meetings. I utilized the box-Pierce test statistic to gauge the stationarity of the time-series components included in the regression. The COVID-19 case count variable was the only variable included in the regression models that was consistently non-stationary for each school district and each model. In order to convert the COVID-19 case count to a stationary time-series, differencing was employed, which helps to stabilize the mean of a time series by removing changes in the level of a time series. Lags, which were chosen based on lag testing results, were also utilized to garner more significant results from the models. COVID-19 case count was lagged 2 months for all of the models. School board meetings were also lagged by 2 months for CPSD and LAUSD. However, school board meetings reached a singularity when I attempted to run the models for NYCPSD with the lag included, so the NYCPSD regression utilized the differenced measure of school board meetings. The results of the regression models are significantly limited, as previously mentioned, by not only a lacking measurement

teacher union strength but also because the impact of COVID-19 is not linear. Simply put, the policy responses and individual impacts felt by COVID-19 are defined by a high level of uncertainty and complexity, which can't be holistically analyzed utilized methods of linear regression. However, the dynamic linear regression models still provide more detail to the larger conversation of school reopening policies, COVID-19, the media, and teachers unions.

Dynamic Linear Model Results

Model 1 - Chicago Public School District
Dependent Variable: 'Anti-Teachers/Teachers Union'

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.6E-01	3.4E-02	7.7	2e-07 ***
COVID-19 Case Count (diff) (L2)	1.5E-06	4.9E-07	3.0	0.007 **
School Reopening (diff)	-1.5E-03	1.9E-02	-0.1	0.936
School Board Meetings (L2)	3.5E-02	2.0E-02	1.8	0.092 .

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.07229 on 20 degrees of freedom
Multiple R-squared: 0.3671,
Adjusted R-squared: 0.2721
F-statistic: 3.867 on 3 and 20 DF,
p-value: 0.02483

Figure 22. CPSD Dynamic Linear Regression Model 1

Unsurprisingly, the dynamic linear regression models for CPSD yielded the most significant results due to the larger amount of data available. Model 1 (*Figure 22*), which utilized the average 'Anti-Teachers/Teachers Union' rhetoric score as the dependent variable, indicates that COVID-19 case count, with a two-month lag had a statistically significant and positive impact on the 'Anti-Teachers/Teachers Union' rhetoric in the media. Illustrating that as COVID-19 case counts rise, the average 'Anti-

Teachers/Teachers Union’ rhetoric in the media also increases, albeit at a two-month lag rate. Interestingly, Model 1 also shows that school board meetings had an *approaching* statistically significant positive influence on average ‘Anti-Teachers/Teachers Union’ rhetoric, by a lag of two months. The number of school board meetings per month could portray a proxy measure for how interested and involved parents are in their local school district. If there is a pressing issue the school board needs to address, there will be more monthly meetings. Additionally, reopening schools during the COVID-19 pandemic required significant effort from local school boards. Given the strength of the CTU and the established “CPSD” versus “CTU” narrative from a contentious strike in 2012 and 2019, it seems plausible that as the CTU became more engaged in the school reopening process, parents also became more engaged in the process through school board meetings, fanning the flames of ‘Anti-Teachers/Teachers Union’ rhetoric in the media.

Although, the agenda-setting literature has not clearly determined the directionality of influence between the media, policy-making, and public opinion, so ‘Anti-Teachers/Teachers Union’ rhetoric in the media could also be influencing the number of school board meetings by encouraging parents to ‘take control’ of their children’s education. Additionally, Model 2 (*Figure 23*), with ‘Pro-Teachers/Teachers Union’ as the dependent variable, also illustrates that the COVID-19 case count, with a two-month lag had a statistically significant and positive impact on the ‘Pro-Teachers/Teachers Union’ rhetoric in the media. Illustrating that as COVID-19 case counts rise, the average ‘Pro-Teachers/Teachers Union’ rhetoric in the media also increases, albeit at a two-month lag rate. Since the COVID-19 case count was significant and positive for both ‘Anti-Teachers/Teachers Union’ and ‘Pro-Teachers/Teachers

Union’, it seems as though an increase in COVID-19 cases is generally increasing the conversation in the media around COVID-19, which would include an increase in discussion of school reopening policy. Furthermore, COVID-19 cases are positively significant in both models meaning not only is COVID-19 increasing the general amount of conversation in CPSD, COVID-19 is increasing the polarity of the conversation.

Model 2 - Chicago Public School District

Dependent Variable: ‘Pro-Teachers/Teachers Union’

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.9E-01	2.6E-02	11.3	4e-10 ***
COVID-19 Case Count (diff) (L2)	-1.3E-06	3.8E-07	-3.6	0.002 **
School Reopening (diff)	2.3E-02	1.5E-02	1.6	0.125
School Board Meetings (L2)	-7.7E-03	1.5E-02	-0.5	0.624

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.056 on 20 degrees of freedom

Multiple R-squared: 0.4047,

Adjusted R-squared: 0.3154

F-statistic: 4.532 on 3 and 20 DF,

p-value: 0.014

Figure 23. CPSD Dynamic Linear Regression Model 2

Model 1 - Los Angeles Unified School District

Dependent Variable: 'Anti-Teachers/Teachers Union'

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.835E-01	5.686E-02	4.985	0.00416 **
COVID-19 Case Count (diff) (L2)	-8.057E-08	8.287E-08	-0.972	0.37559
School Reopening (diff)	9.621E-03	1.514E-02	0.636	0.55299
School Board Meetings (L2)	4.368E-03	1.059E-02	0.412	0.69714

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05133 on 5 degrees of freedom
Multiple R-squared: 0.2421,
Adjusted R-squared: -0.2126
F-statistic: 0.5325 on 3 and 5 DF,
p-value: 0.6797

Figure 24. LAUSD Dynamic Linear Regression Model 1

Model 2 - Los Angeles Unified School District

Dependent Variable: 'Pro-Teachers/Teachers Union'

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.100E-01	5.686E-02	3.755	0.013 *
COVID-19 Case Count (diff) (L2)	1.061E-07	8.287E-08	1.309	0.248
School Reopening (diff)	1.954E-03	1.481E-02	0.132	0.900
School Board Meetings (L2)	1.223E-03	1.059E-02	0.118	0.911

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05022 on 5 degrees of freedom
Multiple R-squared: 0.2729,
Adjusted R-squared: -0.1633
F-statistic: 0.6256 on 3 and 5 DF,
p-value: 0.6288

Figure 25. LAUSD Dynamic Linear Regression Model 2

Neither of the LAUSD models, shown above in *Figures 24* and *25*, indicate a statistically significant relationship between COVID-19 cases, school board meetings, school reopening policies, or the average ‘Anti-Teacher/Teachers Union’/ ‘Pro-Teachers/Teachers Union’ rhetoric in the media. This is an indication of the significant limitations presented by the measure of school reopening policies, which also connects to the larger conversation happening in the media regarding COVID-19. As previously mentioned, measuring school reopening policies is complex and the scaled reopening variable for school reopenings fails to capture the complexities of social distancing guidelines, vaccine or testing requirements, and mask mandates. In both Model 1 and Model 2 for LAUSD, even though there is no statistical significance attributed to COVID-19 or school reopening policies, the result is still positive in both models. Meaning rather than the initial expectation that school reopening policies would produce a significant impact on “Pro-Teachers/Teachers Union” rhetoric, it seems as though school reopening policies generally increased both “Anti-Teachers/Teachers Union” and “Pro-Teachers/Teachers Union” rhetoric, or more simply, increased the amount of conversation as a whole.

Model 1 - New York City Public School District

Dependent Variable: 'Anti-Teachers/Teachers Union'

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3.126E-01	2.187E-02	14.292	7.34E-06 ***
COVID-19 Case Count (diff) (L2)	-2.512E-08	2.462E-07	-0.102	0.922
School Reopening (diff)	1.553E-02	2.709E-02	0.573	0.587
School Board Meetings (diff)	-3.92E-02	5.32E-02	-0.737	0.489

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.04689 on 6 degrees of freedom
Multiple R-squared: 0.1013,
Adjusted R-squared: -0.3481
F-statistic: 0.2254 on 3 and 6 DF,
p-value: 0.8755

Figure 26. NYCPSD Dynamic Linear Regression Model 1

Model 2 - New York City Public School District

Dependent Variable: 'Pro-Teachers/Teachers Union'

Coefficients:	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	2.377E-01	2.522E-02	9.424	8.11E-05 ***
COVID-19 Case Count (diff) (L2)	-2.204E-08	2.84E-07	-0.078	0.941
School Reopening (diff)	-3.325E-03	3.125E-02	-0.106	0.919
School Board Meetings (diff)	-1.548E-02	6.135E-02	-0.252	0.809

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05408 on 6 degrees of freedom
Multiple R-squared: 0.02298,
Adjusted R-squared: -0.4655
F-statistic: 0.04704 on 3 and 6 DF,
p-value: 0.9852

Figure 27. NYCPSD Dynamic Linear Regression Model 2

Unsurprisingly given the limitations previously mentioned, neither of the models for NYCPSD, shown above in *Figures 26* and *27*, yielded any significant results. In addition to those limitations, NYCPSD has the weakest teachers union out of all three school districts included in the study. The results are quite mixed as an indication of varying teacher union strength and the amount of discussion related to COVID-19 and school reopenings in the media. Similar to the result from both of the LAUSD models, it is noteworthy that there is a positive relationship between the “Pro-Teachers/Teachers Unions” conversation in the media, COVID-19, and school reopenings, as well as the “Anti-Teachers/Teachers Unions” conversation in the media, COVID-19, and school reopenings. Once again, this is an indication that the school reopenings measure is capturing more of the COVID-19 conversation than anticipated and that school reopenings and COVID-19 are generally increasing the overall amount of conversation in the media.

CHAPTER VII – CONCLUSION

When considered together, the NLP, changepoint and dynamic linear model results indicate a complex relationship between the media, education policy, and teachers unions. The NLP results illustrate a clear picture of increasing “Anti-Teachers/Teachers Union” framing in the media surrounding prominent teacher union strikes in 2019 as well as, the Chicago Teachers Union strike regarding school reopening policies in January 2021. This is in line with previous literature analyzing the media’s representation of teacher unions. Furthermore, the complexities of the dynamic linear model results are in conjunction with the unclear directionality of the agenda-setting process. However, it is clear that the consensus that media plays a significant role in determining which issues are important, is applicable to education policy as seen through the dramatic increase in coverage of both teacher union strikes and school closures and reopenings. Since these issues were covered extensively in the media, the saliency of education policy was increased but, the additional analysis of the tone of the coverage revealed a more indicative representation of the politicization of school reopening policies, and COVID-19 in general. Moreover, the strength of the teachers union in a school district significantly impacted the sheer amount of coverage, illustrated by the disparities between LAUSD and CPSD, which have strong teachers unions that exert influence through contentious negotiations over policy and contracts, and NYCPSD, which has a weaker teacher union presence that can’t exert the same level of influence. This is a meaningful conclusion given that literature focusing on the media’s depiction of education issues in the U.S. generally focuses on education policy as a whole and overlooks the importance of teachers and teachers unions. As we begin to grapple with the impacts of the COVID-19

pandemic, it is important to not continue to ignore the role teachers and teachers unions play in education policy. It is equally important to better understand the role of mass media in framing of teachers and teachers unions and how that framing influences public perception and policy outcomes. The political struggle over education policy should not be seen as purely political. Discussions of education policy also involve a discussion of how we make sense of the world, given that the education system is one of the primary institutions involved in the production of shared principles and beliefs. Seen this way, battles over the ‘soul’ of education are also a battle over how we interpret the world around us, and what social problems receive attention.

CHAPTER VIII - LIMITATIONS

Unfortunately, there is not a useful continuous measurement of teacher union strength or influence in politics, which limits the results of the dynamic regression models significantly. Another limitation to the regression models is the school reopening measurement. School district reopening policies differed widely on issues such as social distancing guidelines, mask mandates, and vaccination/testing requirements. Therefore, some elements of a school district's reopening policy could have been more influential than others. The limitation of measuring school reopening policies highlights that the changes are not linear and there is a larger conversation happening around COVID in general, which is more complicated to accurately measure.

It's clear that data limitations from the initial research on the ESSA (2015) were slightly mitigated by focusing on strikes in 2019 through school closures and reopenings however, the inclusion of the entire #RedforEd movement, which began in 2018, would provide an interesting analysis of teachers unions engaged in collective labor action. Furthermore, school districts are continuing to update and revise their COVID-19 guidelines so, future work should encompass the entire reopening process, which has yet to fully end. However, future research should also explore a better measurement of school reopening policies to include the policy elements that may not be directly related to COVID-19 but became salient as the media focused on education policy in the wake of school closures. By thinking of school closures as a 'focusing event' (Wolfe et. al. 2013) that carved out an agenda-space for education policy, measurements of school reopening policies should take into consideration the policy discussions around school choice, charter schools, learning loss, funding, and teacher salaries etc.

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